



**DESIGN & CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242**

ADDENDUM NO. 2 TO PROJECT NO. 47450

**CONSTRUCTION WORK
REPAIR/REPLACE PAVEMENT
STATE ARMORY
321 MANOR ROAD
STATEN ISLAND, NY**

June 19, 2023

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

CONSTRUCTION WORK SPECIFICATIONS

1. Document 003132 GEOTECHNICAL DATA: Discard the Document bound in the Project Manual and substitute the accompanying Document (pages 003132 – 1 thru 003132 – 228) noted as “Addendum 02 06/19/2023”.

END OF ADDENDUM

Brady M. Sherlock, P.E.
Director, Division of Design
Design & Construction

DOCUMENT 003132

GEOTECHNICAL DATA

The subsurface logs included in this Document were made on the dates indicated on the individual logs.

The observed water levels and/or conditions noted on the subsurface logs are as recorded at the time of exploration. These water levels and/or conditions may vary considerably with time, according to the prevailing climate, rainfall, or other factors and are otherwise dependent on the duration of and method used in the explorations program.

Sound engineering judgment was exercised in preparing the subsurface logs. This information was prepared and is intended for State design and estimate purposes only. Its presentation is for the purpose of providing intended users with access to the same information available to the State. These subsurface logs are presented in good faith and are not intended as a substitute for personal investigation, independent interpretations, or judgment of the bidders.

321 MANOR RD.
STATEN ISLAND, NEW YORK 10314

Addendum 02 06/19/2023

**DRAFT GEOTECHNICAL REPORT
01/18/2023**

**PAVEMENT REPLACEMENT AND REPAIRS
STATEN ISLAND ARMORY / CSMS B
OGS PROJECT NO. 47450**

**321 MANOR RD.
STATEN ISLAND, NEW YORK 10314**

Prepared For:

Clark R. Wilkinson, P.E.
Environmental Design Partnership
900 Route 146
Clifton Park, NY 12065

Prepared By:



P.W. Grosser Consulting, PC
630 Johnson Avenue, Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

PWGC Project Number: END2201

JANUARY 2023



TABLE OF CONTENTS		PAGE
1.0	PURPOSE.....	2
2.0	PROJECT DESCRIPTION	2
2.1	Proposed Development.....	2
3.0	INVESTIGATION AND TESTING.....	3
3.1	Subsurface Investigation Program	3
3.2	Environmental Testing Program.....	4
3.3	Geotechnical Testing Program	5
4.0	FINDINGS	5
4.1	Subsurface Soils.....	5
4.2	Groundwater	6
4.3	Asphalt Observations and Pavement Corings	6
4.4	Infiltration Testing.....	7
4.5	Environmental Characterization.....	8
5.0	RECOMMENDATIONS.....	9
5.1	Soil Properties and Design Parameters	9
6.0	DESIGN RECOMMENDATIONS.....	10
6.1	Flexible Pavement, General.....	10
6.1.1	Flexible Pavement Design Recommendations, Front Access Loop	11
6.1.2	Flexible Pavement Design Recommendations, Access Road 1.....	11
6.1.3	Flexible Pavement Design Recommendations, Martling Avenue Parking Lot POV01B.....	11
6.1.4	Flexible Pavement Design Recommendations, Access Road 2.....	11
6.1.5	Flexible Pavement Design Recommendations, CSMS Parking area POV 02.....	11
6.1.6	Flexible Pavement Design Recommendations, Unpaved Access from Slosson Avenue	12
6.1.7	Flexible Pavement Design Recommendations Table.....	12
6.2	Rigid Pavement, Concrete Pads.....	12
7.0	CONSTRUCTION RECOMMENDATIONS	13
7.1	Site Preparation.....	13
7.2	Structural Fill and Subgrade Preparation	13
7.3	Asphalt Pavement Construction.....	14

APPENDICES

Appendix A	Boring Location Plan
Appendix B	Soil Boring Logs
Appendix C	Environmental Testing Results
Appendix D	Geotechnical Testing Results
Appendix E	Pavement Design Calculations



1.0 PURPOSE

This report presents the results of the geotechnical investigation performed by P.W. Grosser Consulting (PWGC) at 321 Manor Road, Staten Island, New York 10314. The 19.1-acre-site serves as an Army National Guard State Armory. The site is enclosed by Martling Avenue on the north, Slosson Avenue on the east, Drake Avenue on the south, and Manor Road on the west.

This study evaluates the subsurface soil conditions beneath the site and provides recommendations for the design and construction of the proposed pavement replacement and repairs.

2.0 PROJECT DESCRIPTION

2.1 Proposed Development

PWGC's understanding of the proposed site improvements is based on the provided Design Meeting Minutes No.1 dated November 3, 2022. The proposed improvements are understood to consist of:

- Front Access Loop and parking area
 - Mill 2" of existing asphalt pavement and provide 2" of Type 6 top course.
 - Add/replace sidewalk in front of guard booth at main entrance.
- Access Road 1, includes access to south & east sides of Armory & CSMS Annex
 - Remove portions of existing damaged/deteriorated concrete curbing and asphalt.
 - Provide two (2) lifts of 6" each of subbase course Type 2 over stabilization fabric.
 - Provide 6" – 8" thick concrete pads for four (4) dumpsters and up to twelve (12) storage containers.
 - Provide new concrete curb in areas removed and areas on the east side of the access drive near building (approx. 300 lf).
 - Provide 2.5" of Type 3 binder and 1.5" of Type 6 top wearing course asphalt.
 - Geotechnical Engineer to provide recommendations for full-depth replacement.
- Martling Avenue Parking Lot
 - Remove asphalt by milling 2" depth from existing concrete ramp at Martling Avenue, through the gates to include the entire parking area, and access to the rear of the Armory/CSMS (approx. 11,500 sf).
 - Provide 2" of Type 6 top wearing course asphalt.
- Access Road 2, includes access from Martling Avenue to west side of CMS Annex, and access to west and south sides of CSMS building
 - Remove deteriorated asphalt and/or concrete curbing (approx. 300 lf).
 - Provide two (2) lifts of 6" each of subbase course Type 2 (Item 4) over stabilization fabric.
 - Provide concrete curb and mountable concrete curb to define edges of pavement at grass areas (approx. 750 lf).
 - Provide heavy-duty asphalt pavement (binder course and top course).



- Provide 6" – 8" thick concrete pads for two (2) dumpsters and up to sixteen (16) storage containers.
- CSMS Parking area (POV 02), southeast of CSMS Building
 - Remove asphalt by milling 2" of existing parking area (approx. 16,000 sf).
 - Provide 2" of Type 6 top wearing course asphalt.
- Access from Slosson Avenue to unpaved vehicle storage area
 - Remove washed out access area from the back of existing sidewalk to 20' (minimum) past the gate (approx. 800 sf).
 - Provide two (2) lifts of 6" each of subbase course Type 2 (Item 4) over stabilization fabric.
 - Provide heavy-duty asphalt pavement (binder course and top course) or reinforced concrete pavement.
 - Provide re-grading of a portion of the storage area to provide positive drainage away from the access drive toward the existing swale on site, or a newly designed Storm Water Management (SWM) facility.
- Parking area MEP03
 - Remove existing light pole base flush to asphalt.
- Existing Lift in CSMS Maintenance Bay
 - Remove existing lift, including hydraulic lines and piston, pump etc.
 - Sawcut and remove concrete flooring around lift.
 - Fill existing trench and cap with concrete floor tied into existing floor.
 - Provide replacement of Concrete floor at cut-out sections with dowels into existing floor to remain, to provide a smooth floor.

3.0 INVESTIGATION AND TESTING

3.1 Subsurface Investigation Program

The field investigation to determine the engineering characteristics of the subsurface materials included a reconnaissance of the project site, drilling of soil borings, performing standard penetration tests (SPT), obtaining disturbed split-spoon samples and classifying soil materials.

The drilling program consisted of eighteen (18) soil borings (B-01 through B-18) and two (2) infiltration tests (I-1 and I-2) drilled between December 12, 2022 and December 14, 2022 at the locations depicted in **Appendix A**. Each boring conducted at a paved area was started with pavement coring to observe the condition of the existing pavement layers. The soil borings were completed to depths of 6 or 12 feet below grade surface (bgs). The drilling was conducted using a Geoprobe rig equipped with a DH-100 Auto Drop Hammer pneumatic hammer contracted from Land Air Water Environmental Services (LAWES) located in Center Moriches, New York.

Split spoon soil samples were obtained continuously down to the indicated termination depth – 6 or 12 feet below grade surface. Soil boring samples were characterized using the Unified Soil



Classification System (ASTM D-2487). Disturbed soil samples were obtained in general accordance with ASTM D-1586 Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils. Samples are identified according to project number, boring number and depth and are to be stored at PWGC's office for a period of 6-months.

During the sampling, SPTs were performed in the borings in conjunction with the split-barrel sampling. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer, falling thirty inches, required to advance the split-spoon sampler one foot into the soil (ASTM D-1586). The sampler is lowered to the bottom of the drill hole and the number of blows is recorded for each of the four successive increments of six inches of penetration. The "N" value is the sum of the number of blows required to advance the sampler through the second and third six-inch increment. The results of the standard penetration test indicate the relative density and comparative consistency of the soils and thereby provide a basis for estimating the relative strength of the soil profile components.

A boring log was completed for each soil boring. The log contains information concerning the boring method, samples attempted and recovered, and indications of the presence of various materials such as clay, silt, sand, or gravel, as well as observations of groundwater. The finalized boring logs are included in **Appendix B**.

Upon completion of the boreholes, they were backfilled with native material and packed gravel.

The infiltration tests were performed in accordance with the procedures outlined in the New York State Stormwater Management Design Manual, Appendix D. Infiltration test results are reported in **Section 4.4**.

3.2 Environmental Testing Program

Environmental sampling was conducted at the site to detect the potential for subsurface contamination. The site was delineated into six (6) areas: Area 1 (containing B-01, B-02, B-05, and B-06), Area 2 (containing B-10 and B-11), Area 3 (containing B-07, B-08, and B-09), Area 4 (containing B-03, B-14, B-17, B-18), Area 5 (containing B-04, B-12, B-13), and Area 6 (containing B-15 and B-16). One (1) composite sample was taken for each area at a depth between 1' to 2' below grade surface.

The composite samples were bottled, label, and placed on ice until they were picked up by the laboratory courier. The samples were tested for the following parameters: Volatile Organic Compounds (VOCs) by EPA 50305, Semi-volatile Organic Compounds (SVOCs) by GC/MS, Polychlorinated Biphenyls (PCBs) by GC, Organochlorine Pesticides by GC, Total Metals, and Total Solids. See **Appendix C** for the Laboratory Analytical Report and **Section 4.5** for discussion on the environmental sample findings.



3.3 Geotechnical Testing Program

Geotechnical laboratory testing was performed by a reputable, accredited laboratory in accordance with relevant ASTM standards to assess the engineering properties of the in-situ soils. The following tests were conducted:

- Grain and particle size analysis using sieve and/or hydrometer, to assist in USCS soil classification and to evaluate susceptibility to freeze/thaw.
- Atterberg Limit Determination analysis to assist in USCS soil classification and strength properties of fine-grained soils.
- Unit Weight and Moisture Content Determination.
- Modified Proctor Density to find the in-place compacted density and optimum moisture content.

The samples collected will be stored for 90 days from the date of issue of this report and then disposed of unless otherwise instructed in writing by the client.

See **Appendix D** for geotechnical laboratory testing results.

4.0 FINDINGS

4.1 Subsurface Soils

A generalized profile describing the typical soil conditions encountered during the subsurface investigation can be found below. Detailed description of the type of soils found during drilling is given in the borehole logs in **Appendix B**.

In general, the shallow native soils were found to be predominantly reddish-brown silty sands and sandy silts (Stratum 2). Uncontrolled fill (Stratum 1) was found immediately under the existing pavements and consisted of brown to black sands and gravel with RCA, fragments of brick, and wood debris. The silty sands were underlain by brown, medium to fine grained sands with trace silt and trace to little gravel.

**Table 1 - Generalized Stratigraphy**

Stratum	Approximate Depth to Bottom of Stratum (feet)	Soil Encountered	Consistency/Density
<u>Stratum 1:</u> Uncontrolled Fill	0'-4.5'	Brown to black sands, RCA, fragments of brick, asphalt and wood, organic fibers, topsoil. Present in borings: B-4, B-5, B-8, B-10, B-12, B-13, B-14, B-15, B-16, B-17	Very Loose to Medium Dense
<u>Stratum 2:</u> Red brown Sandy Silty/Silty Sand (SM, SP-SM, ML)	2'-8'	Red/brown silty sands, sandy silts or clayey sands. Generally found in each boring as the predominant formation.	Very Loose to Very Dense
<u>Stratum 3:</u> Brown Sand (SP)	6'+	Brown, medium to fine grained sands. Trace to little gravel, trace silt.	Medium Dense to Very Dense

4.2 Groundwater

Groundwater was not observed during the field investigation. Based on USGS records, there is an active well (No. 403735074071401) located approximately 2,000 ft north of the site. Groundwater was measured at the well between El. +71' and El. +77' (NGVD 1929) from 2004 to 2016. The groundwater table would be expected to be found at approximately 59' to 81' below grade surface at the site.

PWGC notes that Brooks Lake is in the vicinity of the USGS well. This lake receives stormwater from Clove Lakes Park and likely contributes to a local rise in groundwater elevation during and after heavy rain events. Groundwater levels may fluctuate slightly with seasonal climatic variations, precipitation events, tidal periods and changes in the land use.

4.3 Asphalt Observations and Pavement Corings

Pavement cores were performed at each of the borings, where applicable, to determine the existing pavement composition and condition. Land Air Water Environmental Services, the drilling contractor, used a 6-inch drill bit to collect the samples prior to continuing the geotechnical borings with the split spoon sampling. See Table 2 below for a summary of the pavement core findings.



Table 2 - Pavement Coring Summary

Boring #	Project Area Code	Project Area 1	Project Area 2	Asphalt Layer 1	Asphalt Layer 2	Concrete Layer 1	Concrete Layer 2
B-1	SWM	SWM	Armory	-	-	-	-
B-2	POV01A	Front Access	Armory	2.5 in	-	5.75 in	-
B-3	Access Road 2	Access Road 2	CSMS	2.0 in	2.5 in	-	-
B-4	SWM	SWM	CSMS	-	-	-	-
B-5	Access Road 1	Access Road 1	Armory	2.5 in	2.0 in	-	-
B-6	Access Road 1	Access Road 1	Armory	4 in	-	5 in	6 in
B-7	Access Road 1	Access Road 1	Armory	2 in	-	-	-
B-8	POV01B	Martling Ave P Lot	Armory	3.5 in	-	-	-
B-9	POV01B	Martling Ave P Lot	Armory	4 in	2 in	-	-
B-10	POV01A	Front Access Loop	Armory	1.0 in	-	2.0 in	5.5 in
B-11	POV01A	Front Access Loop	Armory	0.75 in	1.5 in	6.5 in	-
B-12	POV02	Rear Access	CSMS	-	-	-	-
B-13	POV02	Rear Access	CSMS	-	-	-	-
B-14	CNT FAC	Access Road 2	CSMS	6.5 in	-	5.0 in	-
B-15	POV02	Parking Lot	CSMS	4.5 in	-	-	-
B-16	POV02	Parking Lot	CSMS	4.5 in	-	-	-
B-17	Access Road 2	Access Road 2	CSMS	4.5 in	-	-	-
B-18	Access Road 2	Access Road 2	CSMS	1.5 in	-	-	-

The pavement conditions varied across the site. Borings B-2, B-6, B-10, B-11, and B-14 were found to have unreinforced concrete with large aggregate underlying the asphalt pavement. These borings, with the exception of B-6, were found near the site entrances along Manor Road and Slosson Avenue.

PWGC did not observe a granular base course layer beneath the existing pavement sections in any of the corings/borings.

A visual inspection of the existing bituminous pavements at the site indicated moderate to severe distress, primarily as a result of fatigue, age, thermal, and shrinkage related cracking.



Infiltration testing was conducted as per the New York State Stormwater Management Design Manual, Appendix D: Infiltration Testing Requirements. With the aid of the drilling contractor, a 4" diameter solid casing was advanced to 10' depth below grade.

Once the casing was advanced, a 24-hour pre-soak period was carried out with 24" of water poured inside the casing. Following the 24-hour pre-soak, 24" of water was added to the casing and the level drop was recorded after one (1) hour. This process repeated for three (3) additional times for each infiltration test. Results and recommended field infiltration rates can be found in the below tables.

Table 3 - Infiltration Test Results: I-1

Test Series	Infiltration Rate (in/hr)
Test #1	2.250 in/hr
Test #2	1.875 in/hr
Test #3	1.625 in/hr
Test #4	1.500 in/hr
Recommended Rate: 1.5" in/hr	

Table 4 - Infiltration Test Results: I-2

Test Series	Infiltration Rate (in/hr)
Test #1	1.500 in/hr
Test #2	1.125 in/hr
Test #3	1.063 in/hr
Test #4	0.875 in/hr
Recommended Rate: 0.875" in/hr	

The infiltration test results indicate that the sands of Stratum 3 meet the minimum 0.5 in/hr field infiltration rate required for infiltration practices as established by the New York State Department of Environmental (NYSDEC) Stormwater Design Manual.

4.5 Environmental Characterization

Environmental sampling was conducted at the site to detect the potential for subsurface contamination. Composite soil samples were collected from six (6) separate areas at the property. The areas are delineated on the plan included in **Appendix A**.



The results indicated detectable concentrations of pesticides and/or metals in four of the six samples collected that exceed the New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCO); however, these compounds at these concentrations are typically observed within historic fill material which is prevalent throughout shallow soils across much of New York City and are not indicative of an on-site point source of contamination. Table 5 below summarizes the contaminants detected that exceed the NYSDEC UUSCOs.

Table 5 – Environmental Testing Summary

Environmental Area ID	Contaminants Detected Exceeding NYSDEC UUSCOs
A-3	Nickel
A-4	Pesticides (4,4 DDE, 4,4 DDD, 4,4 DDT)
A-5	Pesticides (4,4 DDE, 4,4 DDD) and Lead
A-6	Copper

Although these samples contained contaminants exceeding the NYSDEC UUSCOs, concentrations are below the NYSDEC Commercial Use Soil Cleanup Objectives and the NYSDEC Protection of Groundwater Standards. Therefore, soils within these areas will not require removal and can be reused onsite. However, if these soils are to be excavated and transported off-site, they should be managed properly and disposed of at a properly permitted facility.

5.0 RECOMMENDATIONS

The geotechnical recommendations presented in this report are based on the information available regarding the proposed construction, the results obtained from the soil test borings, and PWGC's experience with similar projects. Because the soil test borings represent a very small statistical subsurface sampling, conditions encountered during construction may differ substantially from those indicated by the soil test borings. The soil that was sampled and tested may differ from what is found during construction. If unexpected conditions are discovered, adjustments to design and construction may be necessary.

This geotechnical report is based on the provided meeting minutes, field testing results and project information and the assumptions stated in this report. Changes in the proposed location or design of the structures can have significant effects on the conclusions and recommendations of the geotechnical report. PWGC should be contacted in the event of such changes.

5.1 Soil Properties and Design Parameters



Table 6 below summarizes other engineering design parameters for the generalized soil layers described in Table 1. These parameters were evaluated based on a combination of the soil descriptions from the boring logs, calculations, soil test results and engineering judgement.

Table 6 - Summary of Estimated Soil Properties

Stratum	Approximate Depth to Bottom of Stratum (feet)	Allowable Bearing Capacity (tsf)	Unit Weight, Saturated (pcf)	Soil Friction Angle, (degrees)
<u>Stratum 1:</u> Uncontrolled Fill	0'-4.5'	Unsuitable	127	30
<u>Stratum 2:</u> Red brown Sandy Silty/Silty Sand (SM, SP-SM, ML)	2'-8'+	1.75	131	30
<u>Stratum 3:</u> Brown Sand (SP)	6'+	2.25	125	34

The bearing capacity of the soil encountered during the geotechnical exploration is calculated using the results of the SPT. The blow counts recorded in the boring log were corrected based on the effective overburden pressure of the soil strata and the driving energy of the drill rig equipment. Values for the neighboring strata vary slightly, but not significantly.

6.0 DESIGN RECOMMENDATIONS

6.1 Flexible Pavement, General

In the majority of the paved driveway and parking areas, the distress observed in the pavements appears to be a result of subgrade soil fatigue, lack of a drainable base course, normal aging and thermal related effect. The subgrade course and pavement fatigue has resulted in localized surface depressions and cracking.

Adequate, long-term, flexible pavement design would require a full-depth replacement with the addition of a proper base course. A properly-designed pavement structure would reach terminal serviceability in 15 years. Then, resurfacing or milling and overlayment might be necessary.

A short-term solution would involve milling the existing pavement surface and repaving with a bituminous concrete overlay. Freeze and thaw cycles would continue to weaken and move the subgrade, resulting in the overlay deteriorating in 5 to 7 years to the current condition. Pavement milling is performed by grinding and removing a partial thickness of existing bituminous asphalt pavements to allow for the placement of a new asphalt surface overlay. It should be noted that heaving and thaw weakening of the subgrade soils will not be reduced from the new bituminous overlay.



6.1.1 Flexible Pavement Design Recommendations, Front Access Loop

The Front Access Loop west of the Armory is proposed to have the asphalt top course be milled and replaced to 2" depth, which appears to be acceptable based on the presence of the concrete panels. The straight-line cracking observed in the asphalt in this area indicates that the concrete panels have experienced movement. After milling the asphalt, the concrete panel joints and any observed cracks wider than 1/8" should be repaired. This repair is contingent on the overall condition of the concrete panels, which cannot be observed until after the asphalt is removed.

The Front Access Loop was observed to have asphalt patching along the eastern concrete curb. PWGC recommends a full-depth asphalt replacement, with removal of that section of the concrete panels, starting at the curb and as far as 2' out from the curb.

The curbing was replaced 3-7 years ago, and full depth replacement was done at that time. We think that we should just mill the 2" here as well.

6.1.2 Flexible Pavement Design Recommendations, Access Road 1

PWGC recommends that Access Road 1 receive a Heavy duty full-depth replacement. Excavation for the full-depth replacement may be difficult based on encountering the concrete slab at B-6. The pavement area north of B-6 was observed to have grass intrusion, indicating a thin asphalt layer.

See Table 7 for the recommended Heavy Duty pavement section.

6.1.3 Flexible Pavement Design Recommendations, Martling Avenue Parking Lot POV01B

PWGC recommends that the Martling Avenue Parking Lot receive a Light Duty full-depth replacement. PWGC found that providing a mill & overlay for the 3.5"-asphalt-over-subgrade section would not result in an adequate, long-term repair, see Appendix E for calculations check.

See Table 7 for the recommended Light Duty pavement section.

6.1.4 Flexible Pavement Design Recommendations, Access Road 2

PWGC recommends that Access Road 2 receive a Heavy duty full-depth replacement. Heavy deterioration (potholing, raveling) was observed in this area due to the thin existing pavement section and frequent wear-and-tear from vehicles turning into the garage bays.

See Table 7 for the recommended Heavy Duty pavement section.

6.1.5 Flexible Pavement Design Recommendations, CSMS Parking area POV 02

PWGC recommends that the CSMS Parking area receive a Light Duty full-depth replacement. PWGC found that providing a mill & overlay for the 4.5"-asphalt-over-subgrade section would not result in an adequate, long-term repair, see Appendix E for calculations check.

See Table 7 for the recommended Light Duty pavement section.



6.1.6 Flexible Pavement Design Recommendations, Unpaved Access from Slosson Avenue

PWGC recommends that the Slosson Avenue unpaved access receive a Heavy Duty full-depth construction for new asphalt paving.

See Table 7 for the recommended Heavy Duty pavement section.

6.1.7 Flexible Pavement Design Recommendations Table

PWGC recommends the pavement sections as below in Table 7 for areas that are to receive a full-depth repair or new asphalt pavement. The calculations for pavement design, assumptions and axle loads based on truck type can be found in **Appendix E**.

Table 7 – Pavement Design Recommendations

Layer	Material	Parking Areas, Light Duty Minimum Thickness (Inches)	Heavy Duty, Truck Traffic Minimum Thickness (Inches)
Bituminous Wearing Course	NYSDOT Type 6	1.5	2.0
Bituminous Binder Course	NYSDOT Type 3	2.5	3.0
Aggregate Base	Type 2 Crushed Stone, RCA	6.0	12.0

PWGC has not been supplied with the anticipated design truck/traffic volume for the site at the time of authoring this report. The recommended pavement design sections may be updated following provision of traffic volume data and truck load information.

The asphalt replacement recommended in the design meeting memo called for using 1.5" top wearing course and 2.5" binder course asphalt. PWGC's calculations in Appendix E found that this would provide a Structural Number of 3.08 as compared to the required Structural Number of 3.0. PWGC recommends increasing the asphalt thicknesses based on the limited accuracy of the available traffic data and/or for future traffic increases.

For a typical truck load/configuration, PWGC found and used load data of the model M1088. For a heavy truck load/configuration, PWGC found and used load data of the model M983A4 LET. These truck models appear to be similar to the trucks observed onsite during the field investigation.

6.2 Rigid Pavement, Concrete Pads

The use of rigid concrete pavement is recommended to be used for pads supporting dumpsters and storage containers. An 8-inch thick, 4,500-psi concrete section supported on 4 inches of graded aggregate base, or RCA, and a compacted subgrade is recommended for these areas.



Concrete pavement should incorporate Grade 60 No. 3 deformed bars with recommended longitudinal and transverse spacing of 16" on center. Reinforcement should be placed so that 3 inches of concrete cover is provided.

7.0 CONSTRUCTION RECOMMENDATIONS

7.1 Site Preparation

Any debris observed during site preparation including new fill and excavation areas, vegetation, topsoil, roots, and other deleterious materials that are deemed unsuitable shall be removed from the proposed construction areas and replaced with controlled fill. Site clearing, grubbing and stripping will need to be performed during dry weather conditions. Operation of heavy equipment on the site during wet conditions could result in excessive rutting and mixing of organic debris with the underlying soils.

7.2 Structural Fill and Subgrade Preparation

After excavation to the designated subgrade level has been completed, the base of the excavation should be proofrolled to densify any naturally occurring loose zones or those which were created during the excavation process. Proofrolling should consist of a minimum of four (4) passes of a 700 pound vibratory plate compactor, or equivalent effort. Soils observed to heave or become unstable during proofrolling should be excavated and replaced with compacted structural fill.

In the event localized wet areas are encountered in the subgrade, which may create unstable conditions, the unstable areas should be over-excavated by a minimum of 12-inches and be replaced with Crushed Stone (NYS DOT 703-0201, Type 1) completely wrapped in filter fabric (Mirafi 140N, or equal). The crushed stone and fabric should be keyed into the subgrade using the effort of four (4) passes of a 700-pound vibratory plate compactor.

Structural engineered fill should be inorganic, clean sands with less than 10% fines (silts and clays) content. Any existing soils with a high organic content (browns, topsoil) are suitable for reuse as fill in landscaping areas only as common fill. Excavated soils may be used as structural backfill to raise the subgrade if the soils meet the gradation criteria in Table 9 below.

Laboratory testing should be performed on fill materials to determine the appropriate moisture-density relationship of the fill being placed. Adjustments to the soil moisture by wetting or drying should be made as needed during fill placement.

Suitable fill material should be placed in lifts (lift thickness depends on type of compaction equipment, but generally limited to 12-inch loose lifts). The soil should be compacted by the necessary compaction equipment to meet the specified compaction recommendations.

PWGC recommends that structural fill and backfill be compacted in accordance with the criteria stated in the table below. A qualified field representative should periodically observe fill



placement operations and perform field density tests at various locations throughout each lift to indicate if the specified compaction is being achieved.

Table 8 - Structural Fill Placement Guidelines

AREAS OF FILL PLACEMENT	COMPACTION RECOMMENDATIONS (ASTM D698 – STANDARD PROCTOR)	MOISTURE CONTENT (PERCENT OF OPTIMUM)	RECOMMENDED COMPACTION TESTING FREQUENCY
FLEXIBLE PAVEMENT SUBGRADES, BASE / AGGREGATE BASE	95% (ASTM D1557)	-2% TO +2%	10,000 SF
SUBGRADE FOR FLATWORK, SIDEWALKS	95%	0 TO 4%	15,000 SF

Compaction activities should be conducted under full-time inspection with the Rubber Balloon Method (ASTM D2167), Nuclear Density Gauge (ASTM D2922 and D3012), or other moisture/density test methods. Compaction testing should be performed by an experienced geotechnical inspector at sufficient regularity to ensure proper compaction.

Table 9 - Fill Gradation Requirements

SIEVE SIZE	STRUCTURAL FILL (PERCENT PASSING BY WEIGHT)	COMMON FILL (PERCENT PASSING BY WEIGHT)
3 Inches	100	80-100
½ Inch	50-100	-
No. 4	35-100	20-100
No. 16	20-90	-
No. 50	5-40	-
No. 200 (Fines)	0-10	0-20

7.3 Asphalt Pavement Construction

The bituminous pavements placed in full depth pavement reconstruction areas and new pavement areas should be designed and installed in accordance with Section 402 of the current New York State Department of Transportation Standard Specifications. The top course and binder course pavements should be installed and compacted to between 92 and 97 percent of the materials Theoretical Maximum Density as determined by AASHTO Method T 209.

Hot mix asphalt pavements should be installed in general accordance with Section 402-03.6 of the current New York State Department of Transportation Standard Specifications, or as directed and approved by the Engineer of Record.



After the completion of the construction of the Hot Mix Asphalt, pavement markings should be installed at the same locations, sizes and dimensions as shown on the Project Plans and Specifications. Pavement markings shall be installed in two (2) coats, which will be performed no sooner than thirty (30), and no longer than forty-five (45) days apart.



8.0 LIMITATIONS

Recommendations provided in this report are based on field observations, subsurface exploration data and present knowledge of the project site. Soil conditions could possibly vary between or beyond the points sampled. Soil boring locations are based on the location of the proposed construction but also consider avoiding existing structures, utilities, and vegetation. These boring locations may not lie within the exact footprints of the proposed construction. Therefore, soil characteristics in this report are only representative of the overall vicinity of the project.

This report may only be used by the client and for the purposes stated within a reasonable time from its issuance. If the locations of the constructed elements differ from the site plan, or any ancillary structures are proposed, PWGC should be notified so that the changes can be reviewed to determine if the recommendations presented in this report are still applicable. No warranty is expressed or implied.



APPENDIX A

BORING LOCATION PLAN



PWGC

CLIENT DRIVEN SOLUTIONS
P.W. GROSSER CONSULTING ENGINEER
AND HYDROGEOLOGIST, P.C.

630 Johnson Avenue - Suite 7
Bohemia, NY - 11716-2618
Phone: (631) 588-6353 - Fax: (631) 588-8705
E-mail: INFO@PWGROSSER.COM

CONSULTANTS



BORING LOCATION PLAN

SCALE: 1" = 100'



- KEY: SOIL BORING, B-X
- INFILTRATION TEST, I-X
- ENVIRONMENTAL AREA, A-X

BASE IMAGE:
NYS ORTHOIMAGERY, DATED 2022

7		
6		
5		
4		
3		
2		
1		

Designed By	B.H.	Date Submitted	
Drawn By	C.C.	Date Created	12/21/2022
Approved By	B.H.	Scale	AS SHOWN

Client: ENVIRONMENTAL DESIGN PARTNERSHIP

Project:
**PAVEMENT REPLACEMENT
AND REPAIRS,
STATE ARMORY AND CSMS B**

Project Address:
**321 MANOR ROAD
STATEN ISLAND, NY**

County File Map Number: _____ District Number: _____
Regulatory Reference Number: _____

**BORING
LOCATION PLAN**

Drawing Number: **APP A1**

Sheet: _____ of **1 OF 2**

Project Number: _____

Unauthorised alteration or addition to this drawing and related documents is a violation of Section 2209 of the New York State Education Law.

END2201



PWGC
CLIENT DRIVEN SOLUTIONS
P.W. GROSSER CONSULTING ENGINEER
AND HYDROGEOLOGIST, P.C.

630 Johnson Avenue - Suite 7
Bohemia, NY - 11716-2619
Phone: (516) 588-8353 - Fax: (516) 588-8705
E-mail: INFO@PWGROSSER.COM

CONSULTANTS

Number	Revision Description	Revision Date
7		
6		
5		
4		
3		
2		
1		

Designed By	B.H.	Date Submitted	
Drawn By	C.C.	Date Created	12/21/2022
Approved By	B.H.	Scale	AS SHOWN

Client: ENVIRONMENTAL DESIGN PARTNERSHIP

Project: PAVEMENT REPLACEMENT AND REPAIRS, STATE ARMORY AND CSMS B

Project Address: 321 MANOR ROAD, STATEN ISLAND, NY

County File Map Number: Sublot Number:

Regulatory Reference Number:

Title of Drawing:

BORING LOCATION PLAN

APP A2
Sheet 2 OF 2
PWGC Project Number:

UNAUTHORIZED REPRODUCTION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SECTION 205 OF THE NEW YORK STATE EDUCATION LAW
END2201



BORING LOCATION PLAN
SCALE: AS SHOWN

- KEY:
- SOIL BORING, B-X
 - INFILTRATION TEST, I-X
 - ENVIRONMENTAL AREA, A-X

BASE IMAGE:
PROVIDED BY ENVIRONMENTAL DESIGN PARTNERSHIP



APPENDIX B SOIL BORING LOGS



USCS SOIL CLASSIFICATION GUIDE

MAJOR DIVISIONS		LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS (MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE)	GRAVEL AND GRAVELLY SOILS (MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE)	CLEAN GRAVELS (LITTLE OR NO FINES)	GW WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GM SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS (MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE)	CLEAN SAND (LITTLE OR NO FINES)	SW WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM SILTY SANDS, SAND-SILT MIXTURES
			SC CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE)	SILTS AND CLAYS (LIQUID LIMITS LESS THAN 50)	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMITS GREATER THAN 50)	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS	PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	



RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

For Sands, Gravels:

Non-Cohesive Soils	N Value (Blows/ft)
Very Loose	0 – 4
Loose	4 – 10
Medium Dense	10 – 30
Dense	30 – 50
Very Dense	50+

For Clays, Silts, Organics:

Cohesive Soils	N Value (Blows/ft)
Very Soft	0 – 2
Soft	2 – 4
Medium (Firm)	4 – 8
Stiff	8 – 15
Very Stiff	15 – 30
Hard	30+

DEFINITIONS OF IDENTIFICATION TERMS FOR GRANULAR SOILS

Principal Component (All Capitalized)

- GRAVEL More than 50% of the sample by weight is Gravel
- SAND More than 50% of the sample by weight is Sand
- SILT More than 50% of the sample by weight is Silt

Minor Component (Proper Case)

- Gravel Less than 50% of the sample by weight is Gravel
- Sand Less than 50% of the sample by weight is Sand
- Silt Less than 50% of the sample by weight is Silt

Proportion terms, for Minor Components (Lower Case)

- and Component ranges from 35% to 50% of the sample by weight
- some Component ranges from 20% to 35% of the sample by weight
- little Component ranges from 10% to 20% of the sample by weight
- trace Component ranges from 0% to 10% of the sample by weight

Size of Soil Components

- Gravel
 - Coarse gravel ranges from 3 inches to 1 inch
 - Medium gravel ranges from 1 inch to 3 / 8 inch
 - Fine gravel ranges from 3 / 8 inch to No. 10 sieve
- Sand
 - Coarse sand ranges from No. 10 sieve to No. 30 sieve
 - Medium sand ranges from No. 30 sieve to No. 60 sieve
 - Fine sand ranges from No. 60 sieve to No. 200 sieve
- Silt
 - Material which passes the No. 200 sieve
- Clay
 - Material which passes the No. 200 sieve
 - Exhibits varying degrees of plasticity

Laboratory Test Abbreviation

Laboratory Tests	Abbreviation
Atterberg	ATG
Moisture Content	MC
Sieve Analysis	SA

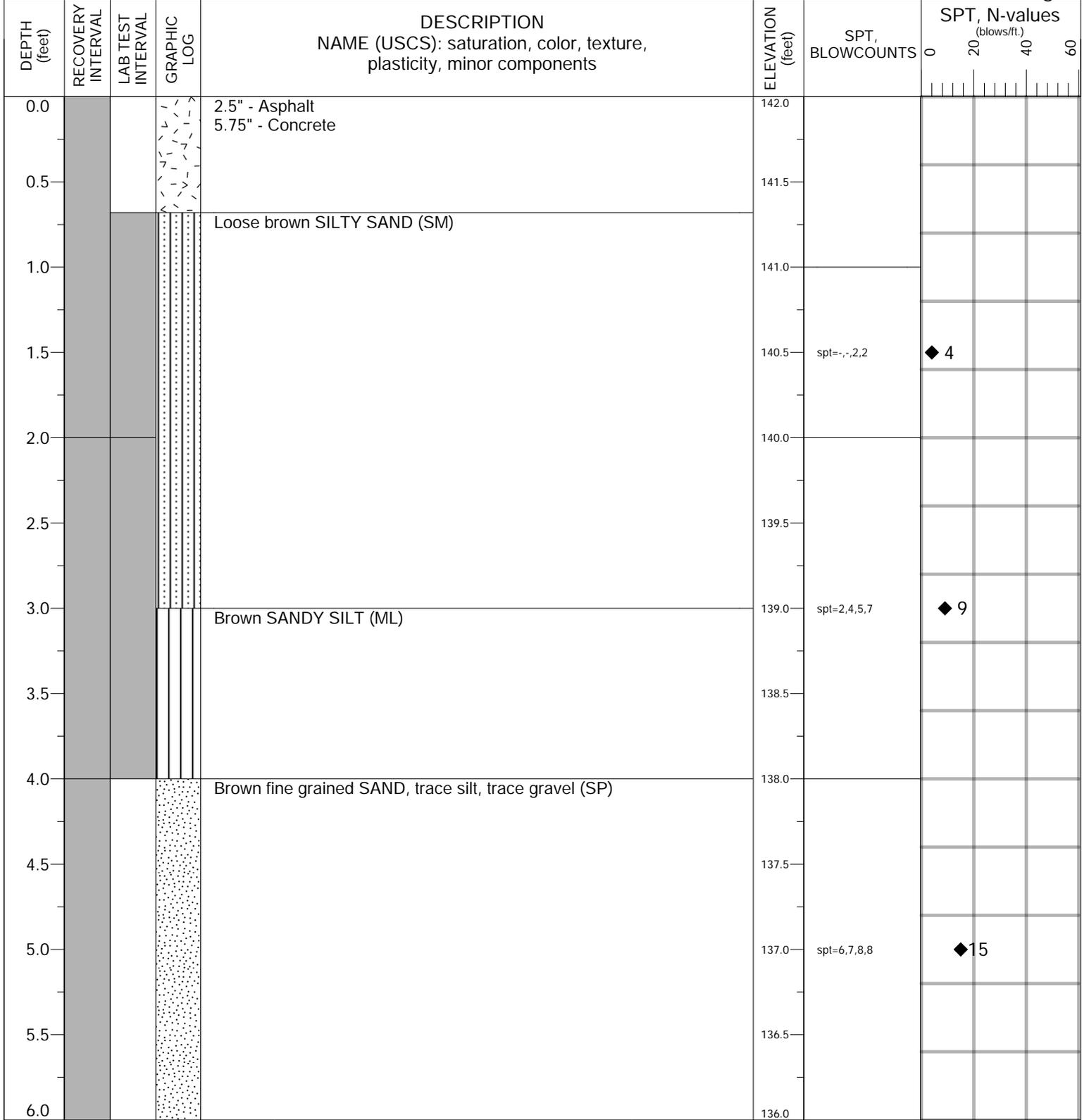
Gradation Designations

- Coarse to fine (c-f) All fractions greater than 10% of the component
- Coarse to medium (c-m) Less than 10% of the component is fine
- Medium to fine (m-f) Less than 10% of the component is coarse
- Coarse (c) Less than 10% of the component is medium and fine
- Medium (m) Less than 10% of the component is coarse and fine
- Fine (f) Less than 10% of the component is coarse and medium

PROJECT #:	END2201	 <small>Addendum 02/06/19/2023</small>	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-01	BORING DEPTH (FT): 12	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/12/2022	DATE FINISHED: 12/12/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 08:55	TIME FINISHED: 09:26
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)							
							0	20	40	60				
0.0				Very loose brown SILTY SAND, trace organics (SM)	145.0									
0.5					144.5									
1.0					144.0	spt=1,1,P,1 P=Push	◆	2						
1.5					143.5									
2.0				Very loose brown SILTY SAND, trace gravel (SM)	143.0									
2.5					142.5									
3.0					142.0	spt=1,1,2,1	◆	3						
3.5					141.5									
4.0				Very loose red/brown SILTY SAND (SM)	141.0									
4.5					140.5									
5.0					140.0	spt=3,1,2,4	◆	3						
5.5					139.5									
6.0				Red/brown fine grained SAND, little silt, trace gravel (SP-SM)	139.0									
6.5					138.5									
7.0					138.0	spt=9,10,13,13	◆	23						
7.5					137.5									
8.0				Dense brown fine grained SAND, trace silt, trace gravel (SP)	137.0									
8.5					136.5									
9.0					136.0	spt=16,17,19,19	◆	36						
9.5					135.5									
10.0					135.0									
10.5					134.5									
11.0					134.0	spt=19,19,18,18	◆	37						
11.5					133.5									
12.0					133.0									

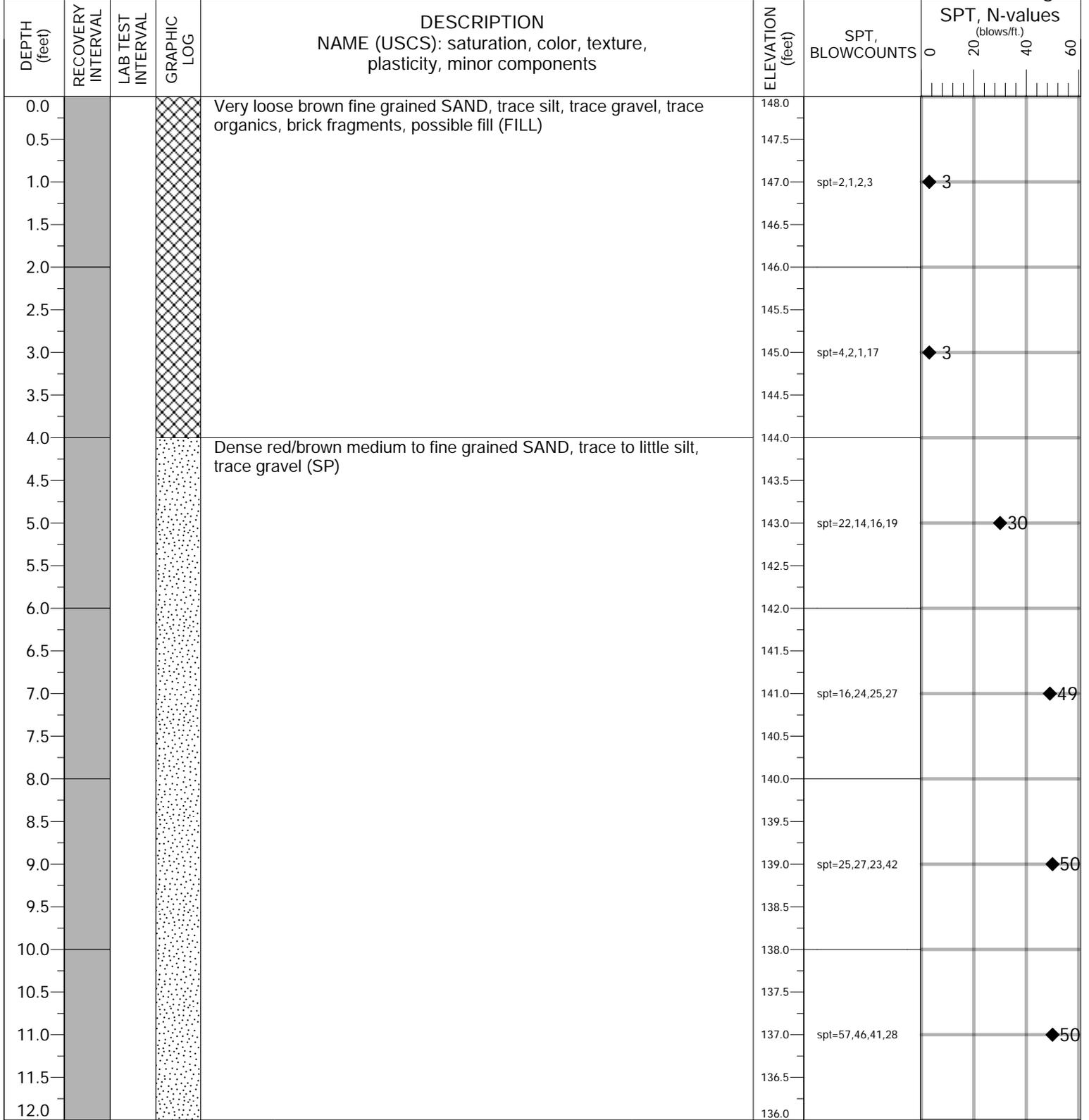
PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-02	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/12/2022	DATE FINISHED: 12/12/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 09:45	TIME FINISHED: 11:10
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling



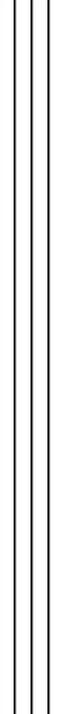
PROJECT #:	END2201	 Addendum 02.06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-03	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/12/2022	DATE FINISHED: 12/12/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 11:30	TIME FINISHED: 11:50
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)			
							0	20	40	60
0.0				2" - Asphalt 2.5" - Asphalt	150.0					
0.5				Brown medium to fine grained SAND, trace silt, trace gravel (SP)	149.5					
1.0				Brown SANDY SILT (ML)	149.0	spt=-,8,5,5				◆13
1.5					148.5					
2.0					148.0					
2.5					147.5					
3.0					147.0	spt=2,3,7,13				◆10
3.5					146.5					
4.0				Brown medium to fine grained SAND, trace gravel (SP)	146.0					
4.5					145.5					
5.0					145.0	spt=12,13,12,11				◆25
5.5					144.5					
6.0					144.0					

PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-04	BORING DEPTH (FT): 12	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/12/2022	DATE FINISHED: 12/12/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 14:08	TIME FINISHED: 14:45
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling



PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-05	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/13/2022	DATE FINISHED: 12/13/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 08:00	TIME FINISHED: 08:30
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)							
							0	20	40	60				
0.0				2.5" - Asphalt 2" - Asphalt	148.0									
0.5				Loose brown medium to fine grained SAND, gravel, possible fill (FILL)	147.5									
1.0				Soft brown SANDY SILT (ML)	147.0									
1.5					146.5									
2.0					146.0									
2.5					145.5									
3.0					145.0									
3.5					144.5									
4.0					144.0									
4.5					143.5									
5.0					143.0									
5.5					142.5									
6.0					142.0									

PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-06	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/13/2022	DATE FINISHED: 12/13/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 08:45	TIME FINISHED: 09:30
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)			
							0	20	40	60
0.0				4" - Asphalt 5" - Concrete 6" - Concrete	152.0					
0.5						151.5				
1.0					151.0					
1.5				Wet, brown SANDY SILT, trace gravel (ML)	150.5					
2.0					150.0					
2.5					149.5					
3.0					149.0	spt=3,6,4,2 PID= 0.3 ppm				◆10
3.5					148.5					
4.0				Wet, red/brown SILTY SAND, trace gravel (SM)	148.0					
4.5					147.5					
5.0					147.0	spt=4,12,18,33 PID= 0.3 ppm				◆30
5.5					146.5					
6.0					146.0					

PROJECT #:	END2201	 <small>Addendum 02/06/19/2023</small>	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-07	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/13/2022	DATE FINISHED: 12/13/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 09:50	TIME FINISHED: 10:10
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)							
							0	20	40	60				
0.0			2" - Asphalt		150.0									
0.5			Wet, brown SANDY SILT, trace gravel (ML)		149.5									
1.0					149.0	spt=2,7,3,3 PID= 0.4 ppm					◆10			
1.5					148.5									
2.0			Red/brown SANDY SILT, trace gravel (ML)		148.0									
2.5					147.5									
3.0					147.0	spt=7,8,13,12 PID= 0.3 ppm					◆21			
3.5					146.5									
4.0			Red/brown SILTY SAND, trace gravel (SM)		146.0									
4.5					145.5									
5.0					145.0	spt=9,11,14,14 PID= 0.3 ppm					◆25			
5.5					144.5									
6.0					144.0									

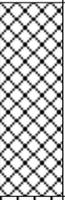
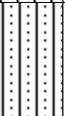
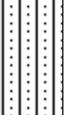
PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-08	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/13/2022	DATE FINISHED: 12/13/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 10:40	TIME FINISHED: 11:00
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)							
							0	20	40	60				
0.0				3.5" - Asphalt	148.0									
0.5				Brown medium to fine grained SAND, possible fill (FILL)	147.5									
1.0				Red/brown SILTY SAND, trace gravel (SM)	147.0	spt=1,9,8,9 PID= 0.2 ppm						◆17		
2.0					146.0									
3.0					145.0	spt=12,12,15,20 PID= 0.0 ppm						◆27		
4.0					144.0									
5.0					143.0	spt=19,50/3" PID= 0.1 ppm						◆50		
6.0					142.0									

PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-09	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/13/2022	DATE FINISHED: 12/13/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 11:10	TIME FINISHED: 11:30
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)			
							0	20	40	60
0.0				4" - Asphalt 2" - Asphalt, trace RCA and medium to fine grained SAND	146.0					
0.5				Red/brown SILTY SAND, trace gravel, possible petroleum odor (SM)	145.5					
1.0					145.0					
1.5					144.5	spt=, 7, 8, 14 PID= 0.4 ppm				◆15
2.0					144.0					
2.5					143.5					
3.0					143.0	spt=14,20,11,16 PID= 0.1 ppm				◆31
3.5					142.5					
4.0				Dense red/brown SANDY SILT, trace gravel (ML)	142.0					
4.5					141.5					
5.0					141.0	spt=13,19,19,19 PID= 0.2 ppm				◆38
5.5					140.5					
6.0					140.0					

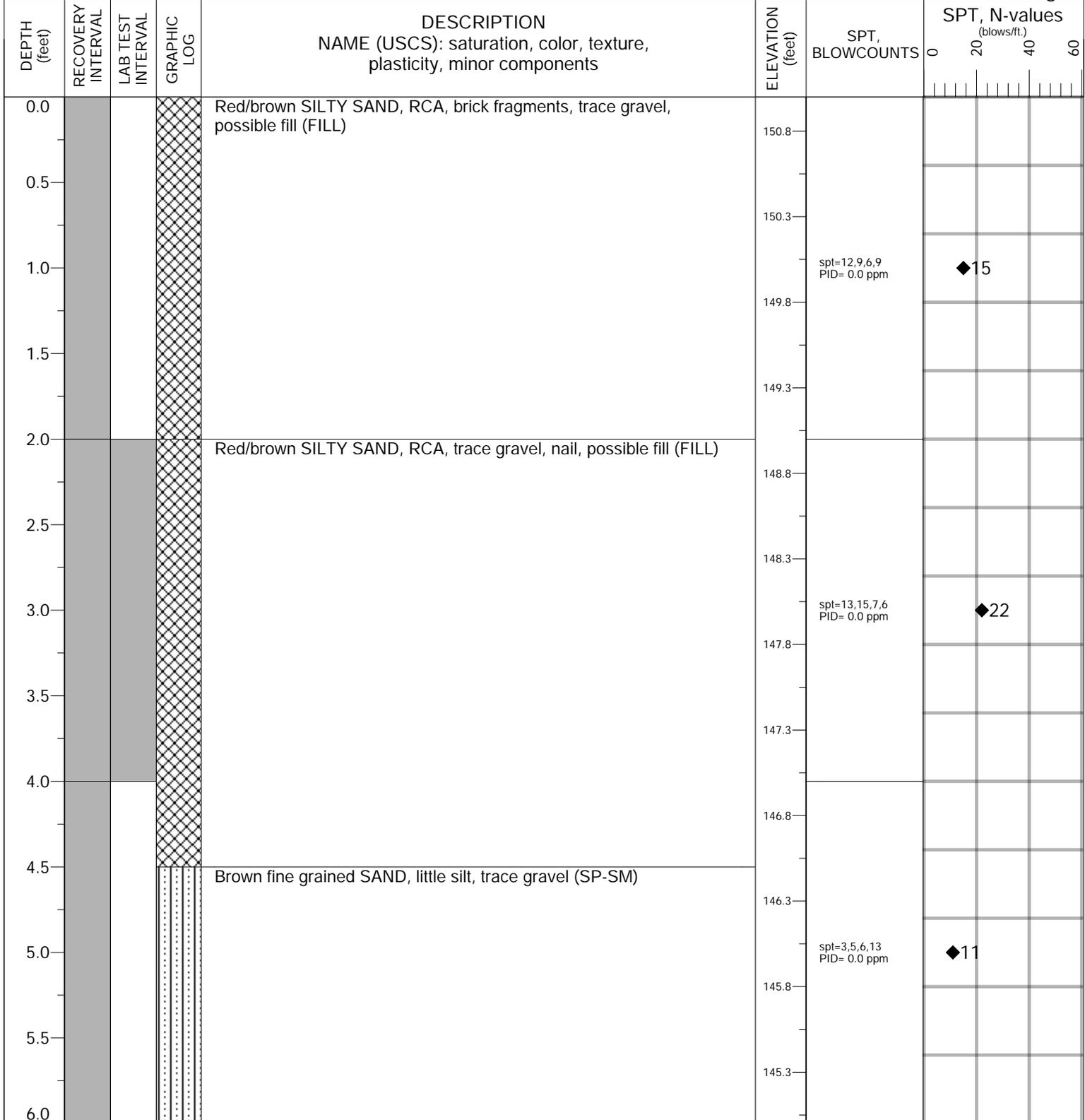
PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-10	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/13/2022	DATE FINISHED: 12/13/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 12:40	TIME FINISHED: 13:15
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)			
							0	20	40	60
0.0				1" - Asphalt 2" - Concrete 5.5" - Concrete	144.8					
0.5				Very loose black coarse grained SAND, trace gravel (Fill)	144.3					
1.0				Very soft red/brown SANDY SILT (ML)	143.8					
1.5				Red/brown SILTY SAND, trace gravel (SM)	143.3	spt=-,-,1,1 PID= 0.8 ppm				◆ 1
2.0				Red/brown SILTY SAND, trace gravel (SM)	142.8					
2.5				Red/brown SILTY SAND, trace gravel (SM)	142.3					
3.0				Red/brown SILTY SAND, trace gravel (SM)	141.8	spt=4,9,6,8 PID= 0.4 ppm				◆ 15
3.5				Red/brown SILTY SAND, trace gravel (SM)	141.3					
4.0				Dense, red/brown SILTY SAND, trace gravel (SM)	140.8					
4.5				Dense, red/brown SILTY SAND, trace gravel (SM)	140.3					
5.0				Dense, red/brown SILTY SAND, trace gravel (SM)	139.8	spt=9,17,16,14 PID= 0.5 ppm				◆ 33
5.5				Dense, red/brown SILTY SAND, trace gravel (SM)	139.3					
6.0				Dense, red/brown SILTY SAND, trace gravel (SM)	139.3					

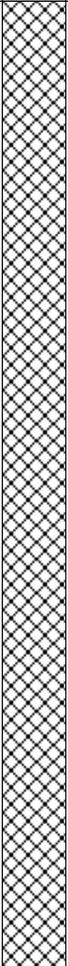
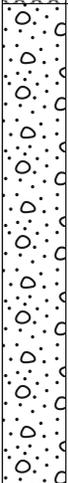
PROJECT #:	END2201	 <small>Addendum 02/06/19/2023</small>	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-11	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/13/2022	DATE FINISHED: 12/13/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 13:30	TIME FINISHED: 14:00
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)							
							0	20	40	60				
0.0				0.75" - Asphalt 1.5" - Asphalt 6.5" - Concrete	140.8									
0.5				Very soft, moist, brown SANDY SILT (ML)	140.3									
1.0					139.8									
1.5				Red/brown SANDY SILT (ML)	139.3	spt=-,-,P,1 P=Push PID= 0.9 ppm	◆	1						
2.0					138.8									
2.5				Red/brown SANDY SILT (ML)	138.3									
3.0					137.8	spt=2,2,5,6 PID= 0.3 ppm	◆	7						
3.5				Red/brown SANDY SILT (ML)	137.3									
4.0					136.8									
4.5				Red/brown fine grained SAND, little silt, trace gravel (SP-SM)	136.3									
5.0					135.8	spt=7,9,13,11 PID= 0.4 ppm	◆	22						
5.5				Red/brown fine grained SAND, little silt, trace gravel (SP-SM)	135.3									
6.0														

PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-12	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/14/2022	DATE FINISHED: 12/14/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 07:25	TIME FINISHED: 07:40
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling



PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-13	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/14/2022	DATE FINISHED: 12/14/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 07:55	TIME FINISHED: 08:20
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)			
							0	20	40	60
0.0				Brown medium to fine grained SAND, trace gravel, trace organics, possible fill (FILL)	150.0					
0.5					149.5					
1.0					149.0	spt=8,5,7,7 PID= 0.0 ppm		◆12		
1.5					148.5					
2.0					148.0					
2.5					147.5					
3.0					147.0	spt=8,12,15,16 PID= 0.0 ppm		◆27		
3.5					146.5					
4.0				Very dense fine grained SAND and GRAVEL (SP)	146.0					
4.5					145.5					
5.0					145.0	spt=27,50/3*			◆50	
5.5					144.5					
6.0					144.0					

PROJECT #:	END2201	 <small>Addendum 02/06/19/2023</small>	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-14	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/14/2022	DATE FINISHED: 12/14/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 08:30	TIME FINISHED: 08:58
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)									
							0	20	40	60						
0.0				6.5" - Asphalt 5" - Weathered Concrete	138.8											
0.5						138.3										
1.0				Dark brown SILTY SAND, trace gravel, brick fragments, possible fill (FILL)	137.8											
1.5						137.3	spt=-,-,5,7 PID= 0.0 ppm					◆12				
2.0					136.8											
2.5					136.3											
3.0					135.8	spt=4,4,3,2 PID= 0.0 ppm					◆7					
3.5					135.3											
4.0				Dense brown SILTY SAND, trace gravel (SM)	134.8											
4.5						134.3										
5.0						133.8	spt=6,12,20,10 PID= 0.0 ppm					◆32				
5.5						133.3										
6.0																

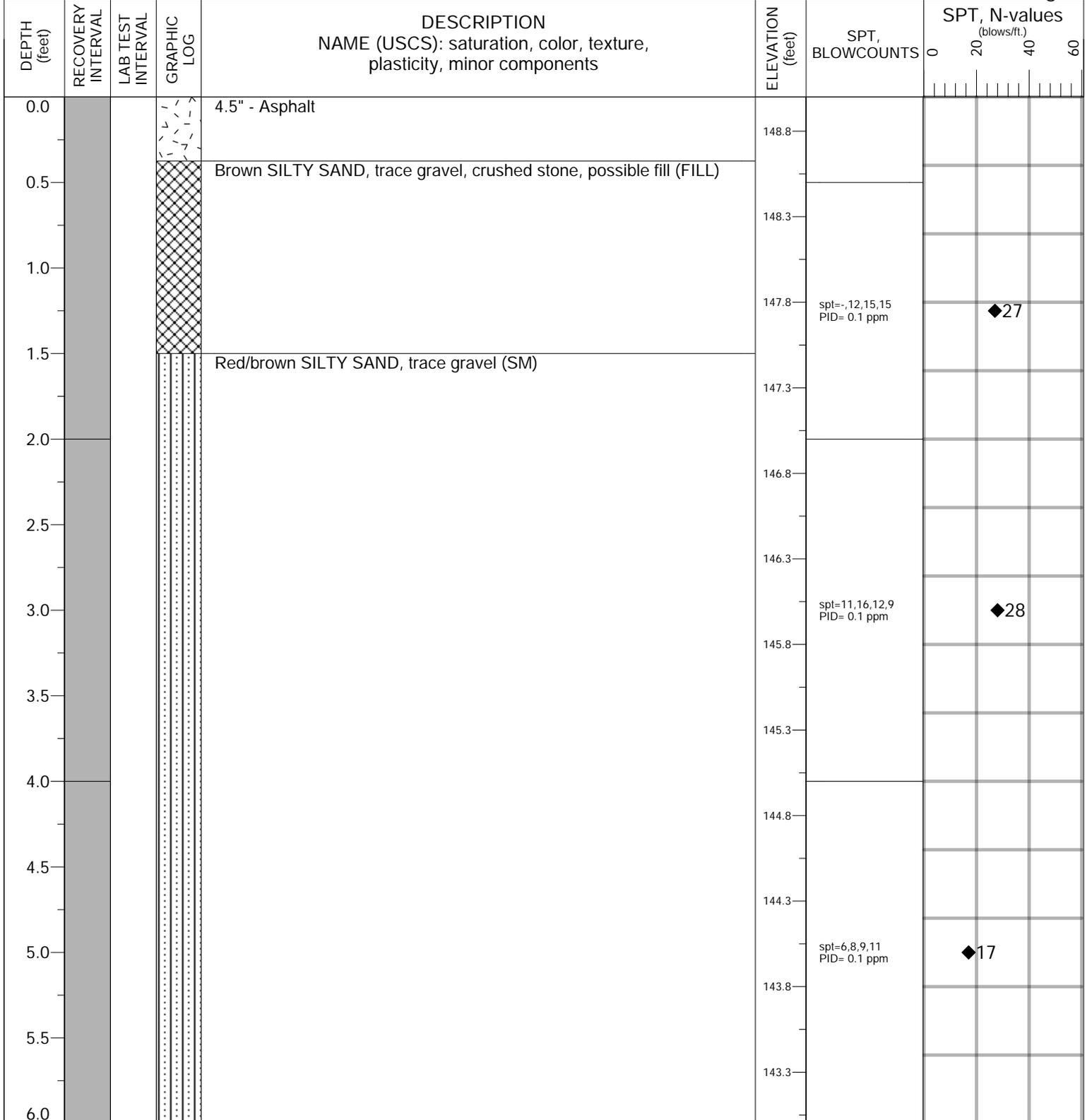
PROJECT #:	END2201	 <small>Addendum 02/06/19/2023</small>	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-15	BORING DEPTH (FT):	BORING DIAMETER (IN):
DRILLING CONTRACTOR:	LAWES	6	4.5
DRILLING METHOD:	Direct Push	DATE STARTED:	DATE FINISHED:
DRILLING EQUIPMENT:	Geoprobe 7822DT	12/14/2022	12/14/2022
SAMPLING METHOD:	Split Spoon	TIME STARTED:	TIME FINISHED:
		09:20	09:45
		LATITUDE:	LONGITUDE:
		N/A	N/A
		PROJECT MANAGER:	LOGGED BY:
		Brian Heflich	William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)							
							0	20	40	60				
0.0				4.5" - Asphalt	150.0									
0.5				Crushed stone and sand, possible fill (FILL)	149.5									
1.0					149.0									
1.5					148.5	spt=-,5,3,3					◆ 8			
2.0					148.0									
2.5					147.5									
3.0					147.0	spt=5,12,13,15					◆ 25			
3.5					146.5									
4.0				Red/brown SILTY SAND, trace gravel (SM)	146.0									
4.5					145.5									
5.0					145.0	spt=11,19,16,15 PID= 0.0 ppm					◆ 35			
5.5					144.5									
6.0					144.0									

PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-16	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/14/2022	DATE FINISHED: 12/14/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 10:05	TIME FINISHED: 10:30
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)							
							0	20	40	60				
0.0				4.5" - Asphalt	148.0									
0.5				Brown SILTY SAND, RCA, wood fragments, trace gravel, possible fill (FILL)	147.5									
1.0					147.0									
1.5					146.5	spt=,10,12,12 PID= 0.0 ppm						◆22		
2.0				Dense red/brown SILTY SAND, trace gravel (SM)	146.0									
2.5					145.5									
3.0					145.0	spt=10,9,14,13 PID= 0.0 ppm						◆23		
3.5					144.5									
4.0					144.0									
4.5					143.5									
5.0					143.0	spt=13,17,17,14 PID= 0.0 ppm						◆34		
5.5					142.5									
6.0					142.0									

PROJECT #:	END2201	 Addendum 02/06/19/2023	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-17	BORING DEPTH (FT): 6	BORING DIAMETER (IN): 4.5
DRILLING CONTRACTOR:	LAWES	DATE STARTED: 12/14/2022	DATE FINISHED: 12/14/2022
DRILLING METHOD:	Direct Push	TIME STARTED: 10:50	TIME FINISHED: 11:15
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER: Brian Heflich	LOGGED BY: William Henfling



PROJECT #:	END2201	 <small>Addendum 02/06/19/2023</small>	
SITE ADDRESS:	321 Manor Rd., Staten Island, NY		
BORING ID:	B-18	BORING DEPTH (FT):	BORING DIAMETER (IN):
DRILLING CONTRACTOR:	LAWES	DATE STARTED:	DATE FINISHED:
DRILLING METHOD:	Direct Push	TIME STARTED:	TIME FINISHED:
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE:	LONGITUDE:
SAMPLING METHOD:	Split Spoon	PROJECT MANAGER:	LOGGED BY:

DEPTH (feet)	RECOVERY INTERVAL	LAB TEST INTERVAL	GRAPHIC LOG	DESCRIPTION NAME (USCS): saturation, color, texture, plasticity, minor components	ELEVATION (feet)	SPT, BLOWCOUNTS	SPT, N-values (blows/ft.)							
							0	20	40	60				
0.0				1.5" Asphalt	150.0									
0.0 - 2.0				Brown SANDY SILT, little gravel (ML)	149.5									
1.0					149.0									
1.5					148.5	spt=7,11,10,11 PID= 0.0 ppm						21		
2.0				Brown SANDY SILT, trace gravel (ML)	148.0									
2.5					147.5									
3.0					147.0	spt=8,8,8,10 PID= 0.1 ppm						16		
3.5					146.5									
4.0				Red/brown SILTY SAND, trace gravel (SM)	146.0									
4.5					145.5									
5.0					145.0	spt=8,9,8,9 PID= 0.0 ppm						17		
5.5					144.5									
6.0					144.0									



APPENDIX C

ENVIRONMENTAL TESTING RESULTS



ANALYTICAL REPORT

Lab Number:	L2269998
Client:	P. W. Grosser 630 Johnson Avenue Bohemia, NY 11716
ATTN:	William Henfling
Phone:	(631) 589-6353
Project Name:	END2201
Project Number:	END2201
Report Date:	12/28/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: END2201**Project Number:** END2201**Lab Number:** L2269998
Addendum 02-06/18/2023**Report Date:** 12/28/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2269998-01	A-1	SOIL	321 MANOR RD	12/13/22 08:15	12/13/22
L2269998-02	A-2	SOIL	321 MANOR RD	12/13/22 13:30	12/13/22
L2269998-03	A-3	SOIL	321 MANOR RD	12/13/22 10:00	12/13/22

Project Name: END2201**Project Number:** END2201**Lab Number:** L2269998**Report Date:** 12/28/22

Addendum 02 06/19/2023

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Total Metals

L2269998-01 through -03: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Tiffani Morrissey

Title: Technical Director/Representative

Date: 12/28/22

ORGANICS

VOLATILES

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
 Client ID: A-1
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260D
 Analytical Date: 12/15/22 14:52
 Analyst: KJD
 Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.3	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.0	0.24	1
1,2-Dichloropropane	ND		ug/kg	1.0	0.13	1
Dibromochloromethane	ND		ug/kg	1.0	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.28	1
Tetrachloroethene	ND		ug/kg	0.53	0.21	1
Chlorobenzene	ND		ug/kg	0.53	0.13	1
Trichlorofluoromethane	ND		ug/kg	4.2	0.74	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.53	0.18	1
Bromodichloromethane	ND		ug/kg	0.53	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.29	1
cis-1,3-Dichloropropene	ND		ug/kg	0.53	0.17	1
1,3-Dichloropropene, Total	ND		ug/kg	0.53	0.17	1
1,1-Dichloropropene	ND		ug/kg	0.53	0.17	1
Bromoform	ND		ug/kg	4.2	0.26	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.53	0.18	1
Benzene	ND		ug/kg	0.53	0.18	1
Toluene	ND		ug/kg	1.0	0.58	1
Ethylbenzene	ND		ug/kg	1.0	0.15	1
Chloromethane	ND		ug/kg	4.2	0.99	1
Bromomethane	ND		ug/kg	2.1	0.62	1
Vinyl chloride	ND		ug/kg	1.0	0.35	1
Chloroethane	ND		ug/kg	2.1	0.48	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.14	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
 Client ID: A-1
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.53	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.59	1
o-Xylene	ND		ug/kg	1.0	0.31	1
Xylenes, Total	ND		ug/kg	1.0	0.31	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14	1
Dibromomethane	ND		ug/kg	2.1	0.25	1
Styrene	ND		ug/kg	1.0	0.21	1
Dichlorodifluoromethane	ND		ug/kg	10	0.97	1
Acetone	25		ug/kg	10	5.1	1
Carbon disulfide	ND		ug/kg	10	4.8	1
2-Butanone	8.1	J	ug/kg	10	2.4	1
Vinyl acetate	ND		ug/kg	10	2.3	1
4-Methyl-2-pentanone	ND		ug/kg	10	1.4	1
1,2,3-Trichloropropane	ND		ug/kg	2.1	0.13	1
2-Hexanone	ND		ug/kg	10	1.2	1
Bromochloromethane	ND		ug/kg	2.1	0.22	1
2,2-Dichloropropane	ND		ug/kg	2.1	0.21	1
1,2-Dibromoethane	ND		ug/kg	1.0	0.30	1
1,3-Dichloropropane	ND		ug/kg	2.1	0.18	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.53	0.14	1
Bromobenzene	ND		ug/kg	2.1	0.15	1
n-Butylbenzene	ND		ug/kg	1.0	0.18	1
sec-Butylbenzene	ND		ug/kg	1.0	0.15	1
tert-Butylbenzene	ND		ug/kg	2.1	0.12	1
o-Chlorotoluene	ND		ug/kg	2.1	0.20	1
p-Chlorotoluene	ND		ug/kg	2.1	0.11	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.2	1.0	1
Hexachlorobutadiene	ND		ug/kg	4.2	0.18	1
Isopropylbenzene	ND		ug/kg	1.0	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.0	0.12	1
Naphthalene	ND		ug/kg	4.2	0.69	1
Acrylonitrile	ND		ug/kg	4.2	1.2	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
 Client ID: A-1
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.0	0.18	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.1	0.34	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.1	0.29	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	0.20	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	0.35	1
1,4-Dioxane	ND		ug/kg	85	37.	1
p-Diethylbenzene	ND		ug/kg	2.1	0.19	1
p-Ethyltoluene	ND		ug/kg	2.1	0.41	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.1	0.20	1
Ethyl ether	ND		ug/kg	2.1	0.36	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.3	1.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	93		70-130

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260D
 Analytical Date: 12/15/22 15:18
 Analyst: KJD
 Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.8	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.96	0.14	1
Chloroform	ND		ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.96	0.22	1
1,2-Dichloropropane	ND		ug/kg	0.96	0.12	1
Dibromochloromethane	ND		ug/kg	0.96	0.13	1
1,1,2-Trichloroethane	ND		ug/kg	0.96	0.26	1
Tetrachloroethene	ND		ug/kg	0.48	0.19	1
Chlorobenzene	ND		ug/kg	0.48	0.12	1
Trichlorofluoromethane	ND		ug/kg	3.8	0.67	1
1,2-Dichloroethane	ND		ug/kg	0.96	0.25	1
1,1,1-Trichloroethane	ND		ug/kg	0.48	0.16	1
Bromodichloromethane	ND		ug/kg	0.48	0.10	1
trans-1,3-Dichloropropene	ND		ug/kg	0.96	0.26	1
cis-1,3-Dichloropropene	ND		ug/kg	0.48	0.15	1
1,3-Dichloropropene, Total	ND		ug/kg	0.48	0.15	1
1,1-Dichloropropene	ND		ug/kg	0.48	0.15	1
Bromoform	ND		ug/kg	3.8	0.24	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.48	0.16	1
Benzene	ND		ug/kg	0.48	0.16	1
Toluene	ND		ug/kg	0.96	0.52	1
Ethylbenzene	ND		ug/kg	0.96	0.14	1
Chloromethane	ND		ug/kg	3.8	0.89	1
Bromomethane	ND		ug/kg	1.9	0.56	1
Vinyl chloride	ND		ug/kg	0.96	0.32	1
Chloroethane	ND		ug/kg	1.9	0.43	1
1,1-Dichloroethene	ND		ug/kg	0.96	0.23	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.13	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.48	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	0.16	1
Methyl tert butyl ether	ND		ug/kg	1.9	0.19	1
p/m-Xylene	ND		ug/kg	1.9	0.54	1
o-Xylene	ND		ug/kg	0.96	0.28	1
Xylenes, Total	ND		ug/kg	0.96	0.28	1
cis-1,2-Dichloroethene	ND		ug/kg	0.96	0.17	1
1,2-Dichloroethene, Total	ND		ug/kg	0.96	0.13	1
Dibromomethane	ND		ug/kg	1.9	0.23	1
Styrene	ND		ug/kg	0.96	0.19	1
Dichlorodifluoromethane	ND		ug/kg	9.6	0.88	1
Acetone	ND		ug/kg	9.6	4.6	1
Carbon disulfide	ND		ug/kg	9.6	4.4	1
2-Butanone	3.3	J	ug/kg	9.6	2.1	1
Vinyl acetate	ND		ug/kg	9.6	2.1	1
4-Methyl-2-pentanone	ND		ug/kg	9.6	1.2	1
1,2,3-Trichloropropane	ND		ug/kg	1.9	0.12	1
2-Hexanone	ND		ug/kg	9.6	1.1	1
Bromochloromethane	ND		ug/kg	1.9	0.20	1
2,2-Dichloropropane	ND		ug/kg	1.9	0.19	1
1,2-Dibromoethane	ND		ug/kg	0.96	0.27	1
1,3-Dichloropropane	ND		ug/kg	1.9	0.16	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.48	0.13	1
Bromobenzene	ND		ug/kg	1.9	0.14	1
n-Butylbenzene	ND		ug/kg	0.96	0.16	1
sec-Butylbenzene	ND		ug/kg	0.96	0.14	1
tert-Butylbenzene	ND		ug/kg	1.9	0.11	1
o-Chlorotoluene	ND		ug/kg	1.9	0.18	1
p-Chlorotoluene	ND		ug/kg	1.9	0.10	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.9	0.96	1
Hexachlorobutadiene	ND		ug/kg	3.8	0.16	1
Isopropylbenzene	ND		ug/kg	0.96	0.10	1
p-Isopropyltoluene	ND		ug/kg	0.96	0.10	1
Naphthalene	1.3	J	ug/kg	3.8	0.62	1
Acrylonitrile	ND		ug/kg	3.8	1.1	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	0.96	0.16	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.9	0.31	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.9	0.26	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.9	0.18	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.9	0.32	1
1,4-Dioxane	ND		ug/kg	77	34.	1
p-Diethylbenzene	ND		ug/kg	1.9	0.17	1
p-Ethyltoluene	ND		ug/kg	1.9	0.37	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	1.9	0.18	1
Ethyl ether	ND		ug/kg	1.9	0.33	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	4.8	1.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	93		70-130

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260D
 Analytical Date: 12/15/22 15:44
 Analyst: KJD
 Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.7	3.1	1
1,1-Dichloroethane	ND		ug/kg	1.3	0.19	1
Chloroform	ND		ug/kg	2.0	0.19	1
Carbon tetrachloride	ND		ug/kg	1.3	0.31	1
1,2-Dichloropropane	ND		ug/kg	1.3	0.17	1
Dibromochloromethane	ND		ug/kg	1.3	0.19	1
1,1,2-Trichloroethane	ND		ug/kg	1.3	0.36	1
Tetrachloroethene	ND		ug/kg	0.67	0.26	1
Chlorobenzene	ND		ug/kg	0.67	0.17	1
Trichlorofluoromethane	ND		ug/kg	5.4	0.93	1
1,2-Dichloroethane	ND		ug/kg	1.3	0.34	1
1,1,1-Trichloroethane	ND		ug/kg	0.67	0.22	1
Bromodichloromethane	ND		ug/kg	0.67	0.15	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	0.37	1
cis-1,3-Dichloropropene	ND		ug/kg	0.67	0.21	1
1,3-Dichloropropene, Total	ND		ug/kg	0.67	0.21	1
1,1-Dichloropropene	ND		ug/kg	0.67	0.21	1
Bromoform	ND		ug/kg	5.4	0.33	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.67	0.22	1
Benzene	ND		ug/kg	0.67	0.22	1
Toluene	ND		ug/kg	1.3	0.73	1
Ethylbenzene	ND		ug/kg	1.3	0.19	1
Chloromethane	ND		ug/kg	5.4	1.2	1
Bromomethane	ND		ug/kg	2.7	0.78	1
Vinyl chloride	ND		ug/kg	1.3	0.45	1
Chloroethane	ND		ug/kg	2.7	0.61	1
1,1-Dichloroethene	ND		ug/kg	1.3	0.32	1
trans-1,2-Dichloroethene	ND		ug/kg	2.0	0.18	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.67	0.18	1
1,2-Dichlorobenzene	ND		ug/kg	2.7	0.19	1
1,3-Dichlorobenzene	ND		ug/kg	2.7	0.20	1
1,4-Dichlorobenzene	ND		ug/kg	2.7	0.23	1
Methyl tert butyl ether	ND		ug/kg	2.7	0.27	1
p/m-Xylene	ND		ug/kg	2.7	0.75	1
o-Xylene	ND		ug/kg	1.3	0.39	1
Xylenes, Total	ND		ug/kg	1.3	0.39	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	0.24	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	0.18	1
Dibromomethane	ND		ug/kg	2.7	0.32	1
Styrene	ND		ug/kg	1.3	0.26	1
Dichlorodifluoromethane	ND		ug/kg	13	1.2	1
Acetone	48		ug/kg	13	6.5	1
Carbon disulfide	ND		ug/kg	13	6.1	1
2-Butanone	7.9	J	ug/kg	13	3.0	1
Vinyl acetate	ND		ug/kg	13	2.9	1
4-Methyl-2-pentanone	ND		ug/kg	13	1.7	1
1,2,3-Trichloropropane	ND		ug/kg	2.7	0.17	1
2-Hexanone	ND		ug/kg	13	1.6	1
Bromochloromethane	ND		ug/kg	2.7	0.28	1
2,2-Dichloropropane	ND		ug/kg	2.7	0.27	1
1,2-Dibromoethane	ND		ug/kg	1.3	0.38	1
1,3-Dichloropropane	ND		ug/kg	2.7	0.22	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.67	0.18	1
Bromobenzene	ND		ug/kg	2.7	0.19	1
n-Butylbenzene	ND		ug/kg	1.3	0.22	1
sec-Butylbenzene	ND		ug/kg	1.3	0.20	1
tert-Butylbenzene	ND		ug/kg	2.7	0.16	1
o-Chlorotoluene	ND		ug/kg	2.7	0.26	1
p-Chlorotoluene	ND		ug/kg	2.7	0.14	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	1.3	1
Hexachlorobutadiene	ND		ug/kg	5.4	0.23	1
Isopropylbenzene	ND		ug/kg	1.3	0.15	1
p-Isopropyltoluene	ND		ug/kg	1.3	0.15	1
Naphthalene	ND		ug/kg	5.4	0.87	1
Acrylonitrile	ND		ug/kg	5.4	1.5	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.3	0.23	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.7	0.43	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.7	0.36	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.7	0.26	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.7	0.45	1
1,4-Dioxane	ND		ug/kg	110	47.	1
p-Diethylbenzene	ND		ug/kg	2.7	0.24	1
p-Ethyltoluene	ND		ug/kg	2.7	0.52	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.7	0.26	1
Ethyl ether	ND		ug/kg	2.7	0.46	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	6.7	1.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	94		70-130

Project Name: END2201

Project Number: END2201

Lab Number: L2269998
Addendum 02 06/19/2023

Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D
 Analytical Date: 12/15/22 09:42
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1723990-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: END2201

Project Number: END2201

Lab Number: L2269998
Addendum 02 06/19/2023

Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D
 Analytical Date: 12/15/22 09:42
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1723990-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: END2201

Project Number: END2201

Lab Number: L2269998
Addendum 02 06/19/2023

Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D
 Analytical Date: 12/15/22 09:42
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1723990-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	90		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Lab Number: L2269998

Project Number: END2201

Report Date: 12/28/22

Parameter	LCS		LCSD		%Recovery		RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual	Limits	RPD			
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1723990-3 WG1723990-4									
Methylene chloride	85		84		70-130	1			30
1,1-Dichloroethane	94		91		70-130	3			30
Chloroform	84		82		70-130	2			30
Carbon tetrachloride	85		82		70-130	4			30
1,2-Dichloropropane	94		93		70-130	1			30
Dibromochloromethane	86		87		70-130	1			30
1,1,2-Trichloroethane	84		84		70-130	0			30
Tetrachloroethene	95		93		70-130	2			30
Chlorobenzene	87		87		70-130	0			30
Trichlorofluoromethane	96		96		70-139	0			30
1,2-Dichloroethane	90		90		70-130	0			30
1,1,1-Trichloroethane	85		84		70-130	1			30
Bromodichloromethane	84		84		70-130	0			30
trans-1,3-Dichloropropene	89		88		70-130	1			30
cis-1,3-Dichloropropene	88		87		70-130	1			30
1,1-Dichloropropene	92		90		70-130	2			30
Bromoform	86		86		70-130	0			30
1,1,2,2-Tetrachloroethane	82		81		70-130	1			30
Benzene	89		87		70-130	2			30
Toluene	88		87		70-130	1			30
Ethylbenzene	88		86		70-130	2			30
Chloromethane	95		90		52-130	5			30
Bromomethane	91		88		57-147	3			30

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

Parameter	LCS		LCSD		%Recovery		RPD	RPD	
	%Recovery	Qual	%Recovery	Qual	Limits	Qual		Limits	
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1723990-3 WG1723990-4									
Vinyl chloride	102		98		67-130		4		30
Chloroethane	92		90		50-151		2		30
1,1-Dichloroethene	90		88		65-135		2		30
trans-1,2-Dichloroethene	87		86		70-130		1		30
Trichloroethene	86		85		70-130		1		30
1,2-Dichlorobenzene	87		86		70-130		1		30
1,3-Dichlorobenzene	87		86		70-130		1		30
1,4-Dichlorobenzene	87		86		70-130		1		30
Methyl tert butyl ether	90		90		66-130		0		30
p/m-Xylene	88		87		70-130		1		30
o-Xylene	88		87		70-130		1		30
cis-1,2-Dichloroethene	86		84		70-130		2		30
Dibromomethane	86		86		70-130		0		30
Styrene	87		86		70-130		1		30
Dichlorodifluoromethane	91		89		30-146		2		30
Acetone	89		91		54-140		2		30
Carbon disulfide	90		87		59-130		3		30
2-Butanone	85		84		70-130		1		30
Vinyl acetate	94		85		70-130		10		30
4-Methyl-2-pentanone	82		83		70-130		1		30
1,2,3-Trichloropropane	84		86		68-130		2		30
2-Hexanone	81		82		70-130		1		30
Bromochloromethane	89		88		70-130		1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

Parameter	LCS		LCSD		%Recovery		RPD	RPD	
	%Recovery	Qual	%Recovery	Qual	Limits	Qual		Limits	
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1723990-3 WG1723990-4									
2,2-Dichloropropane	86		84		70-130		2		30
1,2-Dibromoethane	87		87		70-130		0		30
1,3-Dichloropropane	90		91		69-130		1		30
1,1,1,2-Tetrachloroethane	86		86		70-130		0		30
Bromobenzene	83		82		70-130		1		30
n-Butylbenzene	91		89		70-130		2		30
sec-Butylbenzene	87		85		70-130		2		30
tert-Butylbenzene	85		84		70-130		1		30
o-Chlorotoluene	88		83		70-130		6		30
p-Chlorotoluene	86		85		70-130		1		30
1,2-Dibromo-3-chloropropane	82		84		68-130		2		30
Hexachlorobutadiene	98		94		67-130		4		30
Isopropylbenzene	84		83		70-130		1		30
p-Isopropyltoluene	88		86		70-130		2		30
Naphthalene	89		90		70-130		1		30
Acrylonitrile	89		92		70-130		3		30
n-Propylbenzene	88		86		70-130		2		30
1,2,3-Trichlorobenzene	94		94		70-130		0		30
1,2,4-Trichlorobenzene	96		94		70-130		2		30
1,3,5-Trimethylbenzene	85		85		70-130		0		30
1,2,4-Trimethylbenzene	86		84		70-130		2		30
1,4-Dioxane	100		102		65-136		2		30
p-Diethylbenzene	87		86		70-130		1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1723990-3 WG1723990-4								
p-Ethyltoluene	85		83		70-130	2		30
1,2,4,5-Tetramethylbenzene	90		88		70-130	2		30
Ethyl ether	94		94		67-130	0		30
trans-1,4-Dichloro-2-butene	88		87		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91		92		70-130
Toluene-d8	99		100		70-130
4-Bromofluorobenzene	96		98		70-130
Dibromofluoromethane	91		92		70-130

SEMIVOLATILES

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
 Client ID: A-1
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8270E
 Analytical Date: 12/20/22 04:22
 Analyst: MG
 Percent Solids: 86%

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 11:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	20.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	22.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	26.	1
2-Chloronaphthalene	ND		ug/kg	190	19.	1
1,2-Dichlorobenzene	ND		ug/kg	190	35.	1
1,3-Dichlorobenzene	ND		ug/kg	190	33.	1
1,4-Dichlorobenzene	ND		ug/kg	190	34.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	52.	1
2,4-Dinitrotoluene	ND		ug/kg	190	39.	1
2,6-Dinitrotoluene	ND		ug/kg	190	33.	1
Fluoranthene	64	J	ug/kg	120	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	21.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	30.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	33.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	19.	1
Hexachlorobutadiene	ND		ug/kg	190	28.	1
Hexachlorocyclopentadiene	ND		ug/kg	550	180	1
Hexachloroethane	ND		ug/kg	150	31.	1
Isophorone	ND		ug/kg	170	25.	1
Naphthalene	76	J	ug/kg	190	24.	1
Nitrobenzene	ND		ug/kg	170	29.	1
NDPA/DPA	ND		ug/kg	150	22.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	30.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	67.	1
Butyl benzyl phthalate	ND		ug/kg	190	49.	1
Di-n-butylphthalate	ND		ug/kg	190	37.	1
Di-n-octylphthalate	ND		ug/kg	190	66.	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
 Client ID: A-1
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	18.	1
Dimethyl phthalate	ND		ug/kg	190	41.	1
Benzo(a)anthracene	40	J	ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	150	47.	1
Benzo(b)fluoranthene	44	J	ug/kg	120	33.	1
Benzo(k)fluoranthene	ND		ug/kg	120	31.	1
Chrysene	36	J	ug/kg	120	20.	1
Acenaphthylene	ND		ug/kg	150	30.	1
Anthracene	ND		ug/kg	120	38.	1
Benzo(ghi)perylene	ND		ug/kg	150	23.	1
Fluorene	ND		ug/kg	190	19.	1
Phenanthrene	28	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	27.	1
Pyrene	62	J	ug/kg	120	19.	1
Biphenyl	ND		ug/kg	440	25.	1
4-Chloroaniline	ND		ug/kg	190	35.	1
2-Nitroaniline	ND		ug/kg	190	37.	1
3-Nitroaniline	ND		ug/kg	190	36.	1
4-Nitroaniline	ND		ug/kg	190	80.	1
Dibenzofuran	ND		ug/kg	190	18.	1
2-Methylnaphthalene	53	J	ug/kg	230	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	24.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	37.	1
p-Chloro-m-cresol	ND		ug/kg	190	29.	1
2-Chlorophenol	ND		ug/kg	190	23.	1
2,4-Dichlorophenol	ND		ug/kg	170	31.	1
2,4-Dimethylphenol	ND		ug/kg	190	64.	1
2-Nitrophenol	ND		ug/kg	420	73.	1
4-Nitrophenol	ND		ug/kg	270	79.	1
2,4-Dinitrophenol	ND		ug/kg	930	90.	1
4,6-Dinitro-o-cresol	ND		ug/kg	500	93.	1
Pentachlorophenol	ND		ug/kg	150	43.	1
Phenol	ND		ug/kg	190	29.	1
2-Methylphenol	ND		ug/kg	190	30.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	30.	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
 Client ID: A-1
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	37.	1
Benzoic Acid	ND		ug/kg	630	200	1
Benzyl Alcohol	ND		ug/kg	190	59.	1
Carbazole	ND		ug/kg	190	19.	1
1,4-Dioxane	ND		ug/kg	29	8.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		25-120
Phenol-d6	78		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	77		30-120
2,4,6-Tribromophenol	57		10-136
4-Terphenyl-d14	71		18-120

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8270E
 Analytical Date: 12/20/22 04:39
 Analyst: MG
 Percent Solids: 83%

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 11:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	66	J	ug/kg	160	20.	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	23.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	27.	1
2-Chloronaphthalene	ND		ug/kg	200	20.	1
1,2-Dichlorobenzene	ND		ug/kg	200	36.	1
1,3-Dichlorobenzene	ND		ug/kg	200	34.	1
1,4-Dichlorobenzene	ND		ug/kg	200	35.	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	53.	1
2,4-Dinitrotoluene	ND		ug/kg	200	40.	1
2,6-Dinitrotoluene	ND		ug/kg	200	34.	1
Fluoranthene	470		ug/kg	120	23.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	200	21.	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	30.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	34.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	20.	1
Hexachlorobutadiene	ND		ug/kg	200	29.	1
Hexachlorocyclopentadiene	ND		ug/kg	570	180	1
Hexachloroethane	ND		ug/kg	160	32.	1
Isophorone	ND		ug/kg	180	26.	1
Naphthalene	39	J	ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	180	29.	1
NDPA/DPA	ND		ug/kg	160	22.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	200	31.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	200	68.	1
Butyl benzyl phthalate	ND		ug/kg	200	50.	1
Di-n-butylphthalate	ND		ug/kg	200	38.	1
Di-n-octylphthalate	ND		ug/kg	200	67.	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	200	18.	1
Dimethyl phthalate	ND		ug/kg	200	42.	1
Benzo(a)anthracene	200		ug/kg	120	22.	1
Benzo(a)pyrene	210		ug/kg	160	48.	1
Benzo(b)fluoranthene	210		ug/kg	120	33.	1
Benzo(k)fluoranthene	100	J	ug/kg	120	32.	1
Chrysene	190		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	170		ug/kg	120	39.	1
Benzo(ghi)perylene	110	J	ug/kg	160	23.	1
Fluorene	80	J	ug/kg	200	19.	1
Phenanthrene	540		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	31	J	ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	110	J	ug/kg	160	28.	1
Pyrene	380		ug/kg	120	20.	1
Biphenyl	ND		ug/kg	450	26.	1
4-Chloroaniline	ND		ug/kg	200	36.	1
2-Nitroaniline	ND		ug/kg	200	38.	1
3-Nitroaniline	ND		ug/kg	200	37.	1
4-Nitroaniline	ND		ug/kg	200	82.	1
Dibenzofuran	60	J	ug/kg	200	19.	1
2-Methylnaphthalene	26	J	ug/kg	240	24.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	200	21.	1
Acetophenone	ND		ug/kg	200	24.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	38.	1
p-Chloro-m-cresol	ND		ug/kg	200	30.	1
2-Chlorophenol	ND		ug/kg	200	23.	1
2,4-Dichlorophenol	ND		ug/kg	180	32.	1
2,4-Dimethylphenol	ND		ug/kg	200	65.	1
2-Nitrophenol	ND		ug/kg	430	74.	1
4-Nitrophenol	ND		ug/kg	280	81.	1
2,4-Dinitrophenol	ND		ug/kg	950	92.	1
4,6-Dinitro-o-cresol	ND		ug/kg	520	95.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	31.	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	200	38.	1
Benzoic Acid	ND		ug/kg	640	200	1
Benzyl Alcohol	ND		ug/kg	200	61.	1
Carbazole	61	J	ug/kg	200	19.	1
1,4-Dioxane	ND		ug/kg	30	9.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	66		25-120
Phenol-d6	50		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	76		30-120
2,4,6-Tribromophenol	50		10-136
4-Terphenyl-d14	72		18-120

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8270E
 Analytical Date: 12/20/22 05:49
 Analyst: MG
 Percent Solids: 87%

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 11:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	19.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	21.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	25.	1
2-Chloronaphthalene	ND		ug/kg	190	18.	1
1,2-Dichlorobenzene	ND		ug/kg	190	34.	1
1,3-Dichlorobenzene	ND		ug/kg	190	32.	1
1,4-Dichlorobenzene	ND		ug/kg	190	33.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	50.	1
2,4-Dinitrotoluene	ND		ug/kg	190	37.	1
2,6-Dinitrotoluene	ND		ug/kg	190	32.	1
Fluoranthene	180		ug/kg	110	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	28.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	32.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	19.	1
Hexachlorobutadiene	ND		ug/kg	190	27.	1
Hexachlorocyclopentadiene	ND		ug/kg	540	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	170	24.	1
Naphthalene	ND		ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	29.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	65.	1
Butyl benzyl phthalate	ND		ug/kg	190	47.	1
Di-n-butylphthalate	ND		ug/kg	190	36.	1
Di-n-octylphthalate	ND		ug/kg	190	64.	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	17.	1
Dimethyl phthalate	ND		ug/kg	190	39.	1
Benzo(a)anthracene	85	J	ug/kg	110	21.	1
Benzo(a)pyrene	91	J	ug/kg	150	46.	1
Benzo(b)fluoranthene	120		ug/kg	110	32.	1
Benzo(k)fluoranthene	34	J	ug/kg	110	30.	1
Chrysene	86	J	ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	ND		ug/kg	110	36.	1
Benzo(ghi)perylene	46	J	ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	74	J	ug/kg	110	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	42	J	ug/kg	150	26.	1
Pyrene	140		ug/kg	110	19.	1
Biphenyl	ND		ug/kg	430	24.	1
4-Chloroaniline	ND		ug/kg	190	34.	1
2-Nitroaniline	ND		ug/kg	190	36.	1
3-Nitroaniline	ND		ug/kg	190	35.	1
4-Nitroaniline	ND		ug/kg	190	78.	1
Dibenzofuran	ND		ug/kg	190	18.	1
2-Methylnaphthalene	ND		ug/kg	220	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	36.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	22.	1
2,4-Dichlorophenol	ND		ug/kg	170	30.	1
2,4-Dimethylphenol	ND		ug/kg	190	62.	1
2-Nitrophenol	ND		ug/kg	400	70.	1
4-Nitrophenol	ND		ug/kg	260	76.	1
2,4-Dinitrophenol	ND		ug/kg	900	87.	1
4,6-Dinitro-o-cresol	ND		ug/kg	490	90.	1
Pentachlorophenol	ND		ug/kg	150	41.	1
Phenol	ND		ug/kg	190	28.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	29.	1

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	36.	1
Benzoic Acid	ND		ug/kg	610	190	1
Benzyl Alcohol	ND		ug/kg	190	57.	1
Carbazole	ND		ug/kg	190	18.	1
1,4-Dioxane	ND		ug/kg	28	8.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	83		25-120
Phenol-d6	62		10-120
Nitrobenzene-d5	61		23-120
2-Fluorobiphenyl	78		30-120
2,4,6-Tribromophenol	61		10-136
4-Terphenyl-d14	67		18-120

Project Name: END2201

Project Number: END2201

Lab Number: L2269998
Addendum 02 06/19/2023

Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270E
 Analytical Date: 12/20/22 00:05
 Analyst: MG

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 11:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatle Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1724756-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	98	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	29.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	28.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	98	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	26.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	41.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: END2201

Project Number: END2201

Lab Number: L2269998
Addendum 02 06/19/2023

Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270E
 Analytical Date: 12/20/22 00:05
 Analyst: MG

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 11:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1724756-1					
Dimethyl phthalate	ND		ug/kg	160	34.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	28.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Biphenyl	ND		ug/kg	370	21.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	15.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	98	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	19.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	350	62.

Project Name: END2201

Project Number: END2201

Lab Number: L2269998
Addendum 02 06/19/2023

Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270E
 Analytical Date: 12/20/22 00:05
 Analyst: MG

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 11:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatiles Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1724756-1					
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	76.
4,6-Dinitro-o-cresol	ND		ug/kg	420	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	31.
Benzoic Acid	ND		ug/kg	530	160
Benzyl Alcohol	ND		ug/kg	160	50.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	24	7.5

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	81		25-120
Phenol-d6	78		10-120
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	76		30-120
2,4,6-Tribromophenol	68		10-136
4-Terphenyl-d14	96		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Lab Number: L2269998

Project Number: END2201

Report Date: 12/28/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1724756-2 WG1724756-3								
Acenaphthene	76		80		31-137	5		50
1,2,4-Trichlorobenzene	95		85		38-107	11		50
Hexachlorobenzene	63		74		40-140	16		50
Bis(2-chloroethyl)ether	79		72		40-140	9		50
2-Chloronaphthalene	78		82		40-140	5		50
1,2-Dichlorobenzene	73		62		40-140	16		50
1,3-Dichlorobenzene	83		74		40-140	11		50
1,4-Dichlorobenzene	71		69		28-104	3		50
3,3'-Dichlorobenzidine	48		58		40-140	19		50
2,4-Dinitrotoluene	66		81		40-132	20		50
2,6-Dinitrotoluene	76		83		40-140	9		50
Fluoranthene	77		81		40-140	5		50
4-Chlorophenyl phenyl ether	57		77		40-140	30		50
4-Bromophenyl phenyl ether	65		74		40-140	13		50
Bis(2-chloroisopropyl)ether	64		58		40-140	10		50
Bis(2-chloroethoxy)methane	98		91		40-117	7		50
Hexachlorobutadiene	69		67		40-140	3		50
Hexachlorocyclopentadiene	74		75		40-140	1		50
Hexachloroethane	90		76		40-140	17		50
Isophorone	98		92		40-140	6		50
Naphthalene	76		77		40-140	1		50
Nitrobenzene	99		88		40-140	12		50
NDPA/DPA	64		81		36-157	23		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1724756-2 WG1724756-3								
n-Nitrosodi-n-propylamine	73		95		32-121	26		50
Bis(2-ethylhexyl)phthalate	76		90		40-140	17		50
Butyl benzyl phthalate	79		80		40-140	1		50
Di-n-butylphthalate	77		82		40-140	6		50
Di-n-octylphthalate	78		86		40-140	10		50
Diethyl phthalate	58		80		40-140	32		50
Dimethyl phthalate	75		83		40-140	10		50
Benzo(a)anthracene	77		82		40-140	6		50
Benzo(a)pyrene	74		85		40-140	14		50
Benzo(b)fluoranthene	72		76		40-140	5		50
Benzo(k)fluoranthene	74		86		40-140	15		50
Chrysene	73		83		40-140	13		50
Acenaphthylene	83		91		40-140	9		50
Anthracene	84		85		40-140	1		50
Benzo(ghi)perylene	55		86		40-140	44		50
Fluorene	58		80		40-140	32		50
Phenanthrene	80		80		40-140	0		50
Dibenzo(a,h)anthracene	78		90		40-140	14		50
Indeno(1,2,3-cd)pyrene	81		96		40-140	17		50
Pyrene	76		83		35-142	9		50
Biphenyl	77		83		37-127	8		50
4-Chloroaniline	23	Q	43		40-140	61	Q	50
2-Nitroaniline	75		88		47-134	16		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1724756-2 WG1724756-3								
3-Nitroaniline	47		56		26-129	17		50
4-Nitroaniline	58		83		41-125	35		50
Dibenzofuran	65		80		40-140	21		50
2-Methylnaphthalene	76		80		40-140	5		50
1,2,4,5-Tetrachlorobenzene	78		81		40-117	4		50
Acetophenone	86		101		14-144	16		50
2,4,6-Trichlorophenol	80		86		30-130	7		50
p-Chloro-m-cresol	80		90		26-103	12		50
2-Chlorophenol	79		76		25-102	4		50
2,4-Dichlorophenol	100		94		30-130	6		50
2,4-Dimethylphenol	92		88		30-130	4		50
2-Nitrophenol	107		103		30-130	4		50
4-Nitrophenol	65		94		11-114	36		50
2,4-Dinitrophenol	52		59		4-130	13		50
4,6-Dinitro-o-cresol	59		74		10-130	23		50
Pentachlorophenol	56		68		17-109	19		50
Phenol	80		83		26-90	4		50
2-Methylphenol	78		70		30-130.	11		50
3-Methylphenol/4-Methylphenol	75		94		30-130	22		50
2,4,5-Trichlorophenol	72		79		30-130	9		50
Benzoic Acid	28		35		10-110	22		50
Benzyl Alcohol	79		70		40-140	12		50
Carbazole	77		84		54-128	9		50

Lab Control Sample Analysis Batch Quality Control

Project Name: END2201
Project Number: END2201

Lab Number: L2269998
Report Date: 12/28/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1724756-2 WG1724756-3								
1,4-Dioxane	66		40		40-140	49		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	85		90		25-120
Phenol-d6	86		84		10-120
Nitrobenzene-d5	93		84		23-120
2-Fluorobiphenyl	75		78		30-120
2,4,6-Tribromophenol	66		70		10-136
4-Terphenyl-d14	79		76		18-120

PCBS

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
 Client ID: A-1
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8082A
 Analytical Date: 12/19/22 11:24
 Analyst: MEO
 Percent Solids: 86%

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 09:36
 Cleanup Method: EPA 3665A
 Cleanup Date: 12/19/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/19/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	37.8	3.35	1	A
Aroclor 1221	ND		ug/kg	37.8	3.78	1	A
Aroclor 1232	ND		ug/kg	37.8	8.00	1	A
Aroclor 1242	ND		ug/kg	37.8	5.09	1	A
Aroclor 1248	ND		ug/kg	37.8	5.66	1	A
Aroclor 1254	ND		ug/kg	37.8	4.13	1	A
Aroclor 1260	ND		ug/kg	37.8	6.98	1	A
Aroclor 1262	ND		ug/kg	37.8	4.79	1	A
Aroclor 1268	ND		ug/kg	37.8	3.91	1	A
PCBs, Total	ND		ug/kg	37.8	3.35	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	53		30-150	B

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8082A
 Analytical Date: 12/19/22 11:32
 Analyst: MEO
 Percent Solids: 83%

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 09:36
 Cleanup Method: EPA 3665A
 Cleanup Date: 12/19/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/19/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	39.9	3.54	1	A
Aroclor 1221	ND		ug/kg	39.9	4.00	1	A
Aroclor 1232	ND		ug/kg	39.9	8.45	1	A
Aroclor 1242	ND		ug/kg	39.9	5.38	1	A
Aroclor 1248	ND		ug/kg	39.9	5.98	1	A
Aroclor 1254	ND		ug/kg	39.9	4.36	1	A
Aroclor 1260	ND		ug/kg	39.9	7.37	1	A
Aroclor 1262	ND		ug/kg	39.9	5.06	1	A
Aroclor 1268	ND		ug/kg	39.9	4.13	1	A
PCBs, Total	ND		ug/kg	39.9	3.54	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	47		30-150	A
Decachlorobiphenyl	33		30-150	A
2,4,5,6-Tetrachloro-m-xylene	49		30-150	B
Decachlorobiphenyl	38		30-150	B

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8082A
 Analytical Date: 12/19/22 11:40
 Analyst: MEO
 Percent Solids: 87%

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 09:36
 Cleanup Method: EPA 3665A
 Cleanup Date: 12/19/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/19/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	37.3	3.31	1	A
Aroclor 1221	ND		ug/kg	37.3	3.73	1	A
Aroclor 1232	ND		ug/kg	37.3	7.90	1	A
Aroclor 1242	ND		ug/kg	37.3	5.02	1	A
Aroclor 1248	ND		ug/kg	37.3	5.59	1	A
Aroclor 1254	ND		ug/kg	37.3	4.08	1	A
Aroclor 1260	ND		ug/kg	37.3	6.89	1	B
Aroclor 1262	ND		ug/kg	37.3	4.73	1	A
Aroclor 1268	ND		ug/kg	37.3	3.86	1	A
PCBs, Total	ND		ug/kg	37.3	3.31	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	56		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	61		30-150	B

Project Name: END2201

Project Number: END2201

Lab Number: L2269998
Addendum 02 06/19/2023

Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 12/19/22 10:52
Analyst: JM

Extraction Method: EPA 3546
Extraction Date: 12/18/22 09:36
Cleanup Method: EPA 3665A
Cleanup Date: 12/19/22
Cleanup Method: EPA 3660B
Cleanup Date: 12/19/22

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-03 Batch: WG1724723-1						
Aroclor 1016	ND		ug/kg	32.2	2.86	A
Aroclor 1221	ND		ug/kg	32.2	3.23	A
Aroclor 1232	ND		ug/kg	32.2	6.84	A
Aroclor 1242	ND		ug/kg	32.2	4.35	A
Aroclor 1248	ND		ug/kg	32.2	4.84	A
Aroclor 1254	ND		ug/kg	32.2	3.53	A
Aroclor 1260	ND		ug/kg	32.2	5.96	A
Aroclor 1262	ND		ug/kg	32.2	4.10	A
Aroclor 1268	ND		ug/kg	32.2	3.34	A
PCBs, Total	ND		ug/kg	32.2	2.86	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	62		30-150	B

Lab Control Sample Analysis Batch Quality Control

Project Name: END2201
Project Number: END2201

Lab Number: L2269998
Report Date: 12/28/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG1724723-2 WG1724723-3									
Aroclor 1016	58		73		40-140	23		50	A
Aroclor 1260	46		57		40-140	21		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		62		30-150	A
Decachlorobiphenyl	39		48		30-150	A
2,4,5,6-Tetrachloro-m-xylene	55		66		30-150	B
Decachlorobiphenyl	43		52		30-150	B

PESTICIDES

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
 Client ID: A-1
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8081B
 Analytical Date: 12/19/22 11:51
 Analyst: MMG
 Percent Solids: 86%

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 09:02
 Cleanup Method: EPA 3620B
 Cleanup Date: 12/18/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/19/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.82	0.356	1	A
Lindane	ND		ug/kg	0.756	0.338	1	A
Alpha-BHC	ND		ug/kg	0.756	0.215	1	A
Beta-BHC	ND		ug/kg	1.82	0.688	1	A
Heptachlor	ND		ug/kg	0.908	0.407	1	A
Aldrin	ND		ug/kg	1.82	0.639	1	A
Heptachlor epoxide	ND		ug/kg	3.40	1.02	1	A
Endrin	ND		ug/kg	0.756	0.310	1	A
Endrin aldehyde	ND		ug/kg	2.27	0.794	1	A
Endrin ketone	ND		ug/kg	1.82	0.468	1	A
Dieldrin	ND		ug/kg	1.13	0.567	1	A
4,4'-DDE	1.03	J	ug/kg	1.82	0.420	1	B
4,4'-DDD	1.03	J	ug/kg	1.82	0.648	1	B
4,4'-DDT	ND		ug/kg	1.82	1.46	1	B
Endosulfan I	ND		ug/kg	1.82	0.429	1	A
Endosulfan II	ND		ug/kg	1.82	0.607	1	A
Endosulfan sulfate	ND		ug/kg	0.756	0.360	1	A
Methoxychlor	ND		ug/kg	3.40	1.06	1	A
Toxaphene	ND		ug/kg	34.0	9.53	1	A
cis-Chlordane	ND		ug/kg	2.27	0.632	1	A
trans-Chlordane	ND		ug/kg	2.27	0.599	1	A
Chlordane	ND		ug/kg	15.1	6.01	1	A

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
 Client ID: A-1
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	77		30-150	B

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8081B
 Analytical Date: 12/19/22 12:03
 Analyst: MMG
 Percent Solids: 83%

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 09:02
 Cleanup Method: EPA 3620B
 Cleanup Date: 12/18/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/19/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.84	0.360	1	A
Lindane	ND		ug/kg	0.766	0.342	1	A
Alpha-BHC	ND		ug/kg	0.766	0.218	1	A
Beta-BHC	ND		ug/kg	1.84	0.697	1	A
Heptachlor	ND		ug/kg	0.919	0.412	1	A
Aldrin	ND		ug/kg	1.84	0.647	1	A
Heptachlor epoxide	ND		ug/kg	3.45	1.03	1	A
Endrin	ND		ug/kg	0.766	0.314	1	A
Endrin aldehyde	ND		ug/kg	2.30	0.804	1	A
Endrin ketone	ND		ug/kg	1.84	0.473	1	A
Dieldrin	ND		ug/kg	1.15	0.574	1	A
4,4'-DDE	ND		ug/kg	1.84	0.425	1	A
4,4'-DDD	ND		ug/kg	1.84	0.656	1	A
4,4'-DDT	ND		ug/kg	1.84	1.48	1	A
Endosulfan I	ND		ug/kg	1.84	0.434	1	A
Endosulfan II	ND		ug/kg	1.84	0.614	1	A
Endosulfan sulfate	ND		ug/kg	0.766	0.365	1	A
Methoxychlor	ND		ug/kg	3.45	1.07	1	A
Toxaphene	ND		ug/kg	34.5	9.65	1	A
cis-Chlordane	ND		ug/kg	2.30	0.640	1	A
trans-Chlordane	ND		ug/kg	2.30	0.607	1	A
Chlordane	ND		ug/kg	15.3	6.09	1	A

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	83		30-150	B

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8081B
 Analytical Date: 12/19/22 12:16
 Analyst: MMG
 Percent Solids: 87%

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 09:02
 Cleanup Method: EPA 3620B
 Cleanup Date: 12/18/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/19/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.74	0.340	1	A
Lindane	ND		ug/kg	0.724	0.324	1	A
Alpha-BHC	ND		ug/kg	0.724	0.206	1	A
Beta-BHC	ND		ug/kg	1.74	0.659	1	A
Heptachlor	ND		ug/kg	0.868	0.389	1	A
Aldrin	ND		ug/kg	1.74	0.612	1	A
Heptachlor epoxide	ND		ug/kg	3.26	0.977	1	A
Endrin	ND		ug/kg	0.724	0.297	1	A
Endrin aldehyde	ND		ug/kg	2.17	0.760	1	A
Endrin ketone	ND		ug/kg	1.74	0.447	1	A
Dieldrin	ND		ug/kg	1.08	0.543	1	A
4,4'-DDE	0.570	J	ug/kg	1.74	0.402	1	B
4,4'-DDD	ND		ug/kg	1.74	0.620	1	A
4,4'-DDT	ND		ug/kg	1.74	1.40	1	A
Endosulfan I	ND		ug/kg	1.74	0.410	1	A
Endosulfan II	ND		ug/kg	1.74	0.580	1	A
Endosulfan sulfate	ND		ug/kg	0.724	0.344	1	A
Methoxychlor	ND		ug/kg	3.26	1.01	1	A
Toxaphene	ND		ug/kg	32.6	9.12	1	A
cis-Chlordane	ND		ug/kg	2.17	0.605	1	A
trans-Chlordane	ND		ug/kg	2.17	0.573	1	A
Chlordane	ND		ug/kg	14.5	5.75	1	A

Project Name: END2201

Lab Number: L2269998

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	61		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: END2201

Project Number: END2201

Lab Number: L2269998
Addendum 02 06/19/2023

Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8081B
 Analytical Date: 12/19/22 13:08
 Analyst: AAR

Extraction Method: EPA 3546
 Extraction Date: 12/17/22 16:20
 Cleanup Method: EPA 3620B
 Cleanup Date: 12/18/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/19/22

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01-03 Batch: WG1724616-1						
Delta-BHC	ND		ug/kg	1.57	0.307	A
Lindane	ND		ug/kg	0.653	0.292	A
Alpha-BHC	ND		ug/kg	0.653	0.185	A
Beta-BHC	ND		ug/kg	1.57	0.594	A
Heptachlor	ND		ug/kg	0.784	0.351	A
Aldrin	ND		ug/kg	1.57	0.552	A
Heptachlor epoxide	ND		ug/kg	2.94	0.882	A
Endrin	ND		ug/kg	0.653	0.268	A
Endrin aldehyde	ND		ug/kg	1.96	0.686	A
Endrin ketone	ND		ug/kg	1.57	0.404	A
Dieldrin	ND		ug/kg	0.980	0.490	A
4,4'-DDE	ND		ug/kg	1.57	0.362	A
4,4'-DDD	ND		ug/kg	1.57	0.559	A
4,4'-DDT	ND		ug/kg	1.57	1.26	A
Endosulfan I	ND		ug/kg	1.57	0.370	A
Endosulfan II	ND		ug/kg	1.57	0.524	A
Endosulfan sulfate	ND		ug/kg	0.653	0.311	A
Methoxychlor	ND		ug/kg	2.94	0.914	A
Toxaphene	ND		ug/kg	29.4	8.23	A
cis-Chlordane	ND		ug/kg	1.96	0.546	A
trans-Chlordane	ND		ug/kg	1.96	0.517	A
Chlordane	ND		ug/kg	13.1	5.19	A

Project Name: END2201

Project Number: END2201

Lab Number: L2269998
Addendum 02 06/19/2023

Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8081B
 Analytical Date: 12/19/22 13:08
 Analyst: AAR

Extraction Method: EPA 3546
 Extraction Date: 12/17/22 16:20
 Cleanup Method: EPA 3620B
 Cleanup Date: 12/18/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/19/22

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01-03 Batch: WG1724616-1						

Surrogate	%Recovery	Qualifier	Acceptance	
			Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	88		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	75		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG1724616-2 WG1724616-3									
Delta-BHC	78		74		30-150	5		30	A
Lindane	97		89		30-150	9		30	A
Alpha-BHC	99		93		30-150	6		30	A
Beta-BHC	85		81		30-150	5		30	A
Heptachlor	101		93		30-150	8		30	A
Aldrin	95		89		30-150	7		30	A
Heptachlor epoxide	72		79		30-150	9		30	A
Endrin	94		90		30-150	4		30	A
Endrin aldehyde	68		66		30-150	3		30	A
Endrin ketone	93		91		30-150	2		30	A
Dieldrin	100		98		30-150	2		30	A
4,4'-DDE	93		90		30-150	3		30	A
4,4'-DDD	102		98		30-150	4		30	A
4,4'-DDT	100		95		30-150	5		30	A
Endosulfan I	87		85		30-150	2		30	A
Endosulfan II	93		89		30-150	4		30	A
Endosulfan sulfate	73		72		30-150	1		30	A
Methoxychlor	95		88		30-150	8		30	A
cis-Chlordane	90		87		30-150	3		30	A
trans-Chlordane	115		109		30-150	5		30	A

Lab Control Sample Analysis Batch Quality Control

Project Name: END2201
Project Number: END2201

Lab Number: L2269998
Report Date: 12/28/22

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG1724616-2 WG1724616-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene	85		90		30-150	A
Decachlorobiphenyl	92		98		30-150	A
2,4,5,6-Tetrachloro-m-xylene	83		91		30-150	B
Decachlorobiphenyl	78		85		30-150	B

METALS

Project Name: END2201

Lab Number: Addendum 2269998-2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
 Client ID: A-1
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil
 Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	12400		mg/kg	8.80	2.37	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Antimony, Total	0.371	J	mg/kg	4.40	0.334	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Arsenic, Total	6.06		mg/kg	0.880	0.183	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Barium, Total	56.1		mg/kg	0.880	0.153	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Beryllium, Total	0.399	J	mg/kg	0.440	0.029	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Cadmium, Total	0.130	J	mg/kg	0.880	0.086	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Calcium, Total	573		mg/kg	8.80	3.08	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Chromium, Total	15.4		mg/kg	0.880	0.084	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Cobalt, Total	7.91		mg/kg	1.76	0.146	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Copper, Total	18.6		mg/kg	0.880	0.227	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Iron, Total	17500		mg/kg	4.40	0.794	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Lead, Total	22.9		mg/kg	4.40	0.236	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Magnesium, Total	2740		mg/kg	8.80	1.35	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Manganese, Total	232		mg/kg	0.880	0.140	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Mercury, Total	ND		mg/kg	0.079	0.052	1	12/14/22 21:55	12/19/22 19:12	EPA 7471B	1,7471B	DMB
Nickel, Total	18.8		mg/kg	2.20	0.213	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Potassium, Total	584		mg/kg	220	12.7	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Selenium, Total	0.734	J	mg/kg	1.76	0.227	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Silver, Total	ND		mg/kg	0.440	0.249	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Sodium, Total	92.5	J	mg/kg	176	2.77	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Thallium, Total	ND		mg/kg	1.76	0.277	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Vanadium, Total	26.1		mg/kg	0.880	0.178	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC
Zinc, Total	53.4		mg/kg	4.40	0.258	2	12/14/22 21:09	12/22/22 20:12	EPA 3050B	1,6010D	MRC



Project Name: END2201

Lab Number: Addendum 2269998 2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil
 Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	10900		mg/kg	9.15	2.47	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Antimony, Total	ND		mg/kg	4.57	0.348	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Arsenic, Total	5.11		mg/kg	0.915	0.190	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Barium, Total	122		mg/kg	0.915	0.159	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Beryllium, Total	0.482		mg/kg	0.457	0.030	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Cadmium, Total	ND		mg/kg	0.915	0.090	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Calcium, Total	1630		mg/kg	9.15	3.20	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Chromium, Total	13.1		mg/kg	0.915	0.088	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Cobalt, Total	5.82		mg/kg	1.83	0.152	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Copper, Total	22.2		mg/kg	0.915	0.236	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Iron, Total	14600		mg/kg	4.57	0.826	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Lead, Total	26.1		mg/kg	4.57	0.245	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Magnesium, Total	1950		mg/kg	9.15	1.41	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Manganese, Total	201		mg/kg	0.915	0.145	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Mercury, Total	ND		mg/kg	0.078	0.051	1	12/14/22 21:55	12/19/22 19:15	EPA 7471B	1,7471B	DMB
Nickel, Total	12.2		mg/kg	2.29	0.221	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Potassium, Total	488		mg/kg	229	13.2	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Selenium, Total	0.723	J	mg/kg	1.83	0.236	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Silver, Total	ND		mg/kg	0.457	0.259	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Sodium, Total	215		mg/kg	183	2.88	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Thallium, Total	ND		mg/kg	1.83	0.288	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Vanadium, Total	22.0		mg/kg	0.915	0.186	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC
Zinc, Total	75.9		mg/kg	4.57	0.268	2	12/14/22 21:09	12/22/22 20:16	EPA 3050B	1,6010D	MRC



Project Name: END2201

Lab Number: Addendum 2269998 2023

Project Number: END2201

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil
 Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	8170		mg/kg	9.02	2.43	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Antimony, Total	ND		mg/kg	4.51	0.343	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Arsenic, Total	3.66		mg/kg	0.902	0.188	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Barium, Total	37.4		mg/kg	0.902	0.157	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Beryllium, Total	0.271	J	mg/kg	0.451	0.030	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Cadmium, Total	0.148	J	mg/kg	0.902	0.088	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Calcium, Total	2400		mg/kg	9.02	3.16	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Chromium, Total	13.0		mg/kg	0.902	0.087	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Cobalt, Total	10.7		mg/kg	1.80	0.150	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Copper, Total	16.8		mg/kg	0.902	0.233	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Iron, Total	13700		mg/kg	4.51	0.814	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Lead, Total	20.1		mg/kg	4.51	0.242	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Magnesium, Total	2790		mg/kg	9.02	1.39	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Manganese, Total	225		mg/kg	0.902	0.143	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Mercury, Total	ND		mg/kg	0.079	0.051	1	12/14/22 21:55	12/19/22 19:18	EPA 7471B	1,7471B	DMB
Nickel, Total	36.0		mg/kg	2.25	0.218	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Potassium, Total	527		mg/kg	225	13.0	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Selenium, Total	0.446	J	mg/kg	1.80	0.233	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Silver, Total	ND		mg/kg	0.451	0.255	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Sodium, Total	286		mg/kg	180	2.84	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Thallium, Total	ND		mg/kg	1.80	0.284	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Vanadium, Total	21.4		mg/kg	0.902	0.183	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC
Zinc, Total	40.7		mg/kg	4.51	0.264	2	12/14/22 21:09	12/22/22 20:21	EPA 3050B	1,6010D	MRC



Project Name: END2201
Project Number: END2201

Lab Number: 22059983
Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1723203-1									
Aluminum, Total	ND	mg/kg	4.00	1.08	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Antimony, Total	ND	mg/kg	2.00	0.152	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Arsenic, Total	ND	mg/kg	0.400	0.083	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Barium, Total	ND	mg/kg	0.400	0.070	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Beryllium, Total	ND	mg/kg	0.200	0.013	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Cadmium, Total	ND	mg/kg	0.400	0.039	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Calcium, Total	ND	mg/kg	4.00	1.40	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Chromium, Total	ND	mg/kg	0.400	0.038	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Cobalt, Total	ND	mg/kg	0.800	0.066	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Copper, Total	ND	mg/kg	0.400	0.103	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Iron, Total	ND	mg/kg	2.00	0.361	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Lead, Total	ND	mg/kg	2.00	0.107	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Magnesium, Total	ND	mg/kg	4.00	0.616	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Manganese, Total	ND	mg/kg	0.400	0.064	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Nickel, Total	ND	mg/kg	1.00	0.097	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Potassium, Total	ND	mg/kg	100	5.76	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Selenium, Total	ND	mg/kg	0.800	0.103	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Silver, Total	ND	mg/kg	0.200	0.113	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Sodium, Total	ND	mg/kg	80.0	1.26	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Thallium, Total	ND	mg/kg	0.800	0.126	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Vanadium, Total	ND	mg/kg	0.400	0.081	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC
Zinc, Total	ND	mg/kg	2.00	0.117	1	12/14/22 21:09	12/22/22 17:58	1,6010D	MRC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1723206-1									
Mercury, Total	ND	mg/kg	0.083	0.054	1	12/14/22 21:55	12/19/22 18:12	1,7471B	DMB



Project Name: END2201

Lab Number: 22059983
Methodendum 02269983

Project Number: END2201

Report Date: 12/28/22

Method Blank Analysis Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1723203-2 SRM Lot Number: D116-540								
Aluminum, Total	79		-		45-155	-		
Antimony, Total	132		-		2-205	-		
Arsenic, Total	117		-		82-119	-		
Barium, Total	97		-		82-118	-		
Beryllium, Total	104		-		82-118	-		
Cadmium, Total	109		-		82-118	-		
Calcium, Total	100		-		81-119	-		
Chromium, Total	100		-		81-118	-		
Cobalt, Total	107		-		83-117	-		
Copper, Total	106		-		83-117	-		
Iron, Total	104		-		58-142	-		
Lead, Total	110		-		83-117	-		
Magnesium, Total	98		-		75-125	-		
Manganese, Total	99		-		82-118	-		
Nickel, Total	107		-		82-118	-		
Potassium, Total	91		-		68-131	-		
Selenium, Total	116		-		78-122	-		
Silver, Total	113		-		79-121	-		
Sodium, Total	92		-		71-130	-		
Thallium, Total	115		-		80-120	-		
Vanadium, Total	103		-		78-122	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1723203-2 SRM Lot Number: D116-540					
Zinc, Total	110	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1723206-2 SRM Lot Number: D116-540					
Mercury, Total	101	-	58-142	-	

Matrix Spike Analysis Batch Quality Control

Project Name: END2201

Lab Number: L2269998

Project Number: END2201

Report Date: 12/28/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1723203-3 WG1723203-4 QC Sample: L2270086-11 Client ID: MS Sample												
Aluminum, Total	16600	183	16100	0	Q	17500	497	Q	75-125	8		20
Antimony, Total	0.636J	45.7	35.7	78		31.5	70	Q	75-125	13		20
Arsenic, Total	2.97	11	17.9	136	Q	15.0	111		75-125	18		20
Barium, Total	112	183	265	84		188	42	Q	75-125	34	Q	20
Beryllium, Total	1.54	4.57	4.86	73	Q	4.74	71	Q	75-125	3		20
Cadmium, Total	0.428J	4.85	4.73	98		4.50	94		75-125	5		20
Calcium, Total	146000	914	151000	547	Q	160000	1550	Q	75-125	6		20
Chromium, Total	88.9	18.3	78.3	0	Q	73.1	0	Q	75-125	7		20
Cobalt, Total	5.22	45.7	45.2	87		42.7	83		75-125	6		20
Copper, Total	31.0	22.9	49.7	82		41.1	45	Q	75-125	19		20
Iron, Total	42700	91.4	36000	0	Q	38800	0	Q	75-125	7		20
Lead, Total	22.1	48.5	93.5	147	Q	60.9	81		75-125	42	Q	20
Magnesium, Total	27800	914	34000	678	Q	28400	66	Q	75-125	18		20
Manganese, Total	4400	45.7	3200	0	Q	4480	177	Q	75-125	33	Q	20
Nickel, Total	38.8	45.7	70.9	70	Q	72.4	74	Q	75-125	2		20
Potassium, Total	488	914	1300	89		1210	80		75-125	7		20
Selenium, Total	4.31	11	16.7	113		16.5	112		75-125	1		20
Silver, Total	ND	27.4	25.5	93		23.1	85		75-125	10		20
Sodium, Total	688	914	1530	92		1450	84		75-125	5		20
Thallium, Total	0.771J	11	10.0	91		9.77	90		75-125	2		20
Vanadium, Total	82.4	45.7	90.0	17	Q	141	129	Q	75-125	44	Q	20

Matrix Spike Analysis Batch Quality Control

Project Name: END2201

Lab Number: L2269998

Project Number: END2201

Report Date: 12/28/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1723203-3 WG1723203-4 QC Sample: L2270086-11 Client ID: MS Sample									
Zinc, Total	45.1	45.7	95.4	110	79.9	77	75-125	18	20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1723206-3 WG1723206-4 QC Sample: L2270086-11 Client ID: MS Sample									
Mercury, Total	ND	1.59	1.64	103	1.70	104	80-120	4	20

Project Name: END2201

Project Number: END2201

**Lab Serial Dilution
Analysis
Batch Quality Control**

Lab Number: L2269998

Report Date: 12/28/22

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1723203-6 QC Sample: L2270086-11 Client ID: DUP Sample						
Aluminum, Total	16600	20900	mg/kg	26	Q	20
Barium, Total	112	133	mg/kg	19		20
Chromium, Total	88.9	116	mg/kg	30	Q	20
Copper, Total	31.0	36.9	mg/kg	19		20
Iron, Total	42700	62800	mg/kg	47	Q	20
Magnesium, Total	27800	37000	mg/kg	33	Q	20
Manganese, Total	4400	6050	mg/kg	38	Q	20
Vanadium, Total	82.4	105	mg/kg	27	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1723203-6 QC Sample: L2270086-11 Client ID: DUP Sample						
Calcium, Total	146000	157000	mg/kg	8		20

INORGANICS & MISCELLANEOUS

Project Name: END2201
Project Number: END2201

Lab Number: L2269998
Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-01
Client ID: A-1
Sample Location: 321 MANOR RD

Date Collected: 12/13/22 08:15
Date Received: 12/13/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.0		%	0.100	NA	1	-	12/16/22 09:41	121,2540G	RI



Project Name: END2201
Project Number: END2201

Lab Number: L2269998
Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-02
 Client ID: A-2
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 13:30
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.2		%	0.100	NA	1	-	12/14/22 04:47	121,2540G	JD



Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

SAMPLE RESULTS

Lab ID: L2269998-03
 Client ID: A-3
 Sample Location: 321 MANOR RD

Date Collected: 12/13/22 10:00
 Date Received: 12/13/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.9		%	0.100	NA	1	-	12/16/22 09:41	121,2540G	RI



Lab Duplicate Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2269998

Report Date: 12/28/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1723007-1 QC Sample: L2268988-04 Client ID: DUP Sample						
Solids, Total	89.6	87.7	%	2		20
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG1724079-1 QC Sample: L2270541-01 Client ID: DUP Sample						
Solids, Total	89.5	89.8	%	0		20

Project Name: END2201

Lab Number: L2269998

Project Number: END2201

Addendum 02 06/19/2023

Report Date: 12/28/22

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269998-01A	5 gram Encore Sampler	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-01B	5 gram Encore Sampler	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-01C	5 gram Encore Sampler	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),AL-TI(180),TL-TI(180),NI-TI(180),CU-TI(180),SB-TI(180),ZN-TI(180),PB-TI(180),SE-TI(180),V-TI(180),CO-TI(180),MN-TI(180),HG-T(28),FE-TI(180),MG-TI(180),CD-TI(180),K-TI(180),CA-TI(180),NA-TI(180)
L2269998-01E	Plastic 2oz unpreserved for TS	A	NA		2.3	Y	Absent		TS(7)
L2269998-01F	Glass 250ml/8oz unpreserved	A	NA		2.3	Y	Absent		NYTCL-8270(14),NYTCL-8081(14),NYTCL-8082(365)
L2269998-01X	Vial MeOH preserved split	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-01Y	Vial Water preserved split	A	NA		2.3	Y	Absent	14-DEC-22 14:27	NYTCL-8260HLW(14)
L2269998-01Z	Vial Water preserved split	A	NA		2.3	Y	Absent	14-DEC-22 14:27	NYTCL-8260HLW(14)
L2269998-02A	5 gram Encore Sampler	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-02B	5 gram Encore Sampler	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-02C	5 gram Encore Sampler	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-02D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),TL-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),CU-TI(180),SE-TI(180),ZN-TI(180),SB-TI(180),PB-TI(180),V-TI(180),CO-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)
L2269998-02E	Plastic 2oz unpreserved for TS	A	NA		2.3	Y	Absent		TS(7)
L2269998-02F	Glass 250ml/8oz unpreserved	A	NA		2.3	Y	Absent		NYTCL-8270(14),NYTCL-8081(14),NYTCL-8082(365)
L2269998-02X	Vial MeOH preserved split	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-02Y	Vial Water preserved split	A	NA		2.3	Y	Absent	14-DEC-22 14:27	NYTCL-8260HLW(14)

Project Name: END2201

Project Number: END2201

Serial_No:12282217:00

Lab Number: L2269998

Addendum 02 06/19/2023

Report Date: 12/28/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2269998-02Z	Vial Water preserved split	A	NA		2.3	Y	Absent	14-DEC-22 14:27	NYTCL-8260HLW(14)
L2269998-03A	5 gram Encore Sampler	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-03B	5 gram Encore Sampler	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-03C	5 gram Encore Sampler	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-03D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),TL-TI(180),CR-TI(180),NI-TI(180),SE-TI(180),ZN-TI(180),CU-TI(180),SB-TI(180),PB-TI(180),V-TI(180),CO-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CD-TI(180),K-TI(180),NA-TI(180),CA-TI(180)
L2269998-03E	Plastic 2oz unpreserved for TS	A	NA		2.3	Y	Absent		TS(7)
L2269998-03F	Glass 250ml/8oz unpreserved	A	NA		2.3	Y	Absent		NYTCL-8270(14),NYTCL-8081(14),NYTCL-8082(365)
L2269998-03X	Vial MeOH preserved split	A	NA		2.3	Y	Absent		NYTCL-8260HLW(14)
L2269998-03Y	Vial Water preserved split	A	NA		2.3	Y	Absent	14-DEC-22 14:27	NYTCL-8260HLW(14)
L2269998-03Z	Vial Water preserved split	A	NA		2.3	Y	Absent	14-DEC-22 14:27	NYTCL-8260HLW(14)

*Values in parentheses indicate holding time in days



Project Name: END2201

Lab Number: ~~AD266998~~ 06/19/2023

Project Number: END2201

Report Date: 12/28/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name: END2201
Project Number: END2201

Lab Number: ~~AD2269998~~ 06/19/2023
Report Date: 12/28/22

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



Project Name: END2201**Project Number:** END2201**Lab Number:** A12260998 06/19/2023**Report Date:** 12/28/22**Data Qualifiers**

Identified Compounds (TICs).

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



Project Name: END2201**Lab Number:** A2269998
12269998 02/06/19/2023**Project Number:** END2201**Report Date:** 12/28/22

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



ANALYTICAL REPORT

Lab Number:	L2270292
Client:	P. W. Grosser 630 Johnson Avenue Bohemia, NY 11716
ATTN:	William Henfling
Phone:	(631) 589-6353
Project Name:	END2201
Project Number:	END2201
Report Date:	12/29/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Addendum 02-06/19/2023

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2270292-01	A-4	SOIL	321 MANOR RD	12/14/22 10:50	12/14/22
L2270292-02	A-5	SOIL	321 MANOR RD	12/14/22 07:30	12/14/22
L2270292-03	A-6	SOIL	321 MANOR RD	12/14/22 10:01	12/14/22

Project Name: END2201
Project Number: END2201

Lab Number: L2270292
Report Date: 12/29/22

Addendum 02 06/19/2023

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: END2201
Project Number: END2201

Lab Number: L2270292
Report Date: 12/29/22

Addendum 02 06/19/2023

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Total Metals

L2270292-01 through -03: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

The WG1723839-3 MS recoveries, performed on L2270292-01, are outside the acceptance criteria for calcium (229%), copper (130%), lead (154%), magnesium (264%), potassium (142%) and zinc (212%). A post digestion spike was performed and was within acceptance criteria.

The WG1723839-3 MS recoveries for aluminum (1660%) and iron (0%), performed on L2270292-01, do not apply because the sample concentrations are greater than four times the spike amounts added.

The WG1723839-4 Laboratory Duplicate RPDs for arsenic (22%), beryllium (34%), calcium (55%), chromium (54%), copper (71%), iron (36%), lead (29%), magnesium (22%), potassium (21%), vanadium (37%) and zinc (25%), performed on L2270292-01, are outside the acceptance criteria. The elevated RPDs have been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative

Date: 12/29/22

ORGANICS

VOLATILES

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
 Client ID: A-4
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:50
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260D
 Analytical Date: 12/16/22 11:56
 Analyst: NLK
 Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	8.1	3.7	1
1,1-Dichloroethane	ND		ug/kg	1.6	0.23	1
Chloroform	ND		ug/kg	2.4	0.23	1
Carbon tetrachloride	ND		ug/kg	1.6	0.37	1
1,2-Dichloropropane	ND		ug/kg	1.6	0.20	1
Dibromochloromethane	ND		ug/kg	1.6	0.23	1
1,1,2-Trichloroethane	ND		ug/kg	1.6	0.43	1
Tetrachloroethene	ND		ug/kg	0.81	0.32	1
Chlorobenzene	ND		ug/kg	0.81	0.20	1
Trichlorofluoromethane	ND		ug/kg	6.5	1.1	1
1,2-Dichloroethane	ND		ug/kg	1.6	0.42	1
1,1,1-Trichloroethane	ND		ug/kg	0.81	0.27	1
Bromodichloromethane	ND		ug/kg	0.81	0.18	1
trans-1,3-Dichloropropene	ND		ug/kg	1.6	0.44	1
cis-1,3-Dichloropropene	ND		ug/kg	0.81	0.26	1
1,3-Dichloropropene, Total	ND		ug/kg	0.81	0.26	1
1,1-Dichloropropene	ND		ug/kg	0.81	0.26	1
Bromoform	ND		ug/kg	6.5	0.40	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.81	0.27	1
Benzene	ND		ug/kg	0.81	0.27	1
Toluene	ND		ug/kg	1.6	0.88	1
Ethylbenzene	ND		ug/kg	1.6	0.23	1
Chloromethane	ND		ug/kg	6.5	1.5	1
Bromomethane	ND		ug/kg	3.2	0.94	1
Vinyl chloride	ND		ug/kg	1.6	0.54	1
Chloroethane	ND		ug/kg	3.2	0.73	1
1,1-Dichloroethene	ND		ug/kg	1.6	0.38	1
trans-1,2-Dichloroethene	ND		ug/kg	2.4	0.22	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
 Client ID: A-4
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:50
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.81	0.22	1
1,2-Dichlorobenzene	ND		ug/kg	3.2	0.23	1
1,3-Dichlorobenzene	ND		ug/kg	3.2	0.24	1
1,4-Dichlorobenzene	ND		ug/kg	3.2	0.28	1
Methyl tert butyl ether	ND		ug/kg	3.2	0.32	1
p/m-Xylene	ND		ug/kg	3.2	0.90	1
o-Xylene	ND		ug/kg	1.6	0.47	1
Xylenes, Total	ND		ug/kg	1.6	0.47	1
cis-1,2-Dichloroethene	ND		ug/kg	1.6	0.28	1
1,2-Dichloroethene, Total	ND		ug/kg	1.6	0.22	1
Dibromomethane	ND		ug/kg	3.2	0.38	1
Styrene	ND		ug/kg	1.6	0.32	1
Dichlorodifluoromethane	ND		ug/kg	16	1.5	1
Acetone	ND		ug/kg	16	7.8	1
Carbon disulfide	ND		ug/kg	16	7.4	1
2-Butanone	10	J	ug/kg	16	3.6	1
Vinyl acetate	ND		ug/kg	16	3.5	1
4-Methyl-2-pentanone	ND		ug/kg	16	2.1	1
1,2,3-Trichloropropane	ND		ug/kg	3.2	0.20	1
2-Hexanone	ND		ug/kg	16	1.9	1
Bromochloromethane	ND		ug/kg	3.2	0.33	1
2,2-Dichloropropane	ND		ug/kg	3.2	0.33	1
1,2-Dibromoethane	ND		ug/kg	1.6	0.45	1
1,3-Dichloropropane	ND		ug/kg	3.2	0.27	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.81	0.21	1
Bromobenzene	ND		ug/kg	3.2	0.23	1
n-Butylbenzene	ND		ug/kg	1.6	0.27	1
sec-Butylbenzene	ND		ug/kg	1.6	0.24	1
tert-Butylbenzene	ND		ug/kg	3.2	0.19	1
o-Chlorotoluene	ND		ug/kg	3.2	0.31	1
p-Chlorotoluene	ND		ug/kg	3.2	0.17	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.8	1.6	1
Hexachlorobutadiene	ND		ug/kg	6.5	0.27	1
Isopropylbenzene	ND		ug/kg	1.6	0.18	1
p-Isopropyltoluene	ND		ug/kg	1.6	0.18	1
Naphthalene	ND		ug/kg	6.5	1.0	1
Acrylonitrile	ND		ug/kg	6.5	1.8	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
 Client ID: A-4
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:50
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.6	0.28	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.2	0.52	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.2	0.44	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.2	0.31	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.2	0.54	1
1,4-Dioxane	ND		ug/kg	130	57.	1
p-Diethylbenzene	ND		ug/kg	3.2	0.29	1
p-Ethyltoluene	ND		ug/kg	3.2	0.62	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	3.2	0.31	1
Ethyl ether	ND		ug/kg	3.2	0.55	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	8.1	2.3	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260D
 Analytical Date: 12/16/22 12:22
 Analyst: NLK
 Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	7.7	3.5	1
1,1-Dichloroethane	ND		ug/kg	1.5	0.22	1
Chloroform	ND		ug/kg	2.3	0.22	1
Carbon tetrachloride	ND		ug/kg	1.5	0.36	1
1,2-Dichloropropane	ND		ug/kg	1.5	0.19	1
Dibromochloromethane	ND		ug/kg	1.5	0.22	1
1,1,2-Trichloroethane	ND		ug/kg	1.5	0.41	1
Tetrachloroethene	ND		ug/kg	0.77	0.30	1
Chlorobenzene	ND		ug/kg	0.77	0.20	1
Trichlorofluoromethane	ND		ug/kg	6.2	1.1	1
1,2-Dichloroethane	ND		ug/kg	1.5	0.40	1
1,1,1-Trichloroethane	ND		ug/kg	0.77	0.26	1
Bromodichloromethane	ND		ug/kg	0.77	0.17	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	0.42	1
cis-1,3-Dichloropropene	ND		ug/kg	0.77	0.24	1
1,3-Dichloropropene, Total	ND		ug/kg	0.77	0.24	1
1,1-Dichloropropene	ND		ug/kg	0.77	0.24	1
Bromoform	ND		ug/kg	6.2	0.38	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.77	0.26	1
Benzene	ND		ug/kg	0.77	0.26	1
Toluene	ND		ug/kg	1.5	0.84	1
Ethylbenzene	ND		ug/kg	1.5	0.22	1
Chloromethane	ND		ug/kg	6.2	1.4	1
Bromomethane	ND		ug/kg	3.1	0.90	1
Vinyl chloride	ND		ug/kg	1.5	0.52	1
Chloroethane	ND		ug/kg	3.1	0.70	1
1,1-Dichloroethene	ND		ug/kg	1.5	0.37	1
trans-1,2-Dichloroethene	ND		ug/kg	2.3	0.21	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.77	0.21	1
1,2-Dichlorobenzene	ND		ug/kg	3.1	0.22	1
1,3-Dichlorobenzene	ND		ug/kg	3.1	0.23	1
1,4-Dichlorobenzene	ND		ug/kg	3.1	0.26	1
Methyl tert butyl ether	ND		ug/kg	3.1	0.31	1
p/m-Xylene	ND		ug/kg	3.1	0.86	1
o-Xylene	ND		ug/kg	1.5	0.45	1
Xylenes, Total	ND		ug/kg	1.5	0.45	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	0.27	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	0.21	1
Dibromomethane	ND		ug/kg	3.1	0.37	1
Styrene	ND		ug/kg	1.5	0.30	1
Dichlorodifluoromethane	ND		ug/kg	15	1.4	1
Acetone	8.7	J	ug/kg	15	7.4	1
Carbon disulfide	ND		ug/kg	15	7.0	1
2-Butanone	15		ug/kg	15	3.4	1
Vinyl acetate	ND		ug/kg	15	3.3	1
4-Methyl-2-pentanone	ND		ug/kg	15	2.0	1
1,2,3-Trichloropropane	ND		ug/kg	3.1	0.20	1
2-Hexanone	ND		ug/kg	15	1.8	1
Bromochloromethane	ND		ug/kg	3.1	0.32	1
2,2-Dichloropropane	ND		ug/kg	3.1	0.31	1
1,2-Dibromoethane	ND		ug/kg	1.5	0.43	1
1,3-Dichloropropane	ND		ug/kg	3.1	0.26	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.77	0.20	1
Bromobenzene	ND		ug/kg	3.1	0.22	1
n-Butylbenzene	ND		ug/kg	1.5	0.26	1
sec-Butylbenzene	ND		ug/kg	1.5	0.22	1
tert-Butylbenzene	ND		ug/kg	3.1	0.18	1
o-Chlorotoluene	ND		ug/kg	3.1	0.30	1
p-Chlorotoluene	ND		ug/kg	3.1	0.17	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.6	1.5	1
Hexachlorobutadiene	ND		ug/kg	6.2	0.26	1
Isopropylbenzene	ND		ug/kg	1.5	0.17	1
p-Isopropyltoluene	ND		ug/kg	1.5	0.17	1
Naphthalene	ND		ug/kg	6.2	1.0	1
Acrylonitrile	ND		ug/kg	6.2	1.8	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.5	0.26	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.1	0.50	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.1	0.42	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.1	0.30	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.1	0.52	1
1,4-Dioxane	ND		ug/kg	120	54.	1
p-Diethylbenzene	ND		ug/kg	3.1	0.27	1
p-Ethyltoluene	ND		ug/kg	3.1	0.59	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	3.1	0.30	1
Ethyl ether	ND		ug/kg	3.1	0.53	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	7.7	2.2	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	99		70-130

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260D
 Analytical Date: 12/16/22 12:49
 Analyst: NLK
 Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.6	3.0	1
1,1-Dichloroethane	ND		ug/kg	1.3	0.19	1
Chloroform	ND		ug/kg	2.0	0.18	1
Carbon tetrachloride	ND		ug/kg	1.3	0.30	1
1,2-Dichloropropane	ND		ug/kg	1.3	0.16	1
Dibromochloromethane	ND		ug/kg	1.3	0.18	1
1,1,2-Trichloroethane	ND		ug/kg	1.3	0.35	1
Tetrachloroethene	ND		ug/kg	0.66	0.26	1
Chlorobenzene	ND		ug/kg	0.66	0.17	1
Trichlorofluoromethane	ND		ug/kg	5.2	0.91	1
1,2-Dichloroethane	ND		ug/kg	1.3	0.34	1
1,1,1-Trichloroethane	ND		ug/kg	0.66	0.22	1
Bromodichloromethane	ND		ug/kg	0.66	0.14	1
trans-1,3-Dichloropropene	ND		ug/kg	1.3	0.36	1
cis-1,3-Dichloropropene	ND		ug/kg	0.66	0.21	1
1,3-Dichloropropene, Total	ND		ug/kg	0.66	0.21	1
1,1-Dichloropropene	ND		ug/kg	0.66	0.21	1
Bromoform	ND		ug/kg	5.2	0.32	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.66	0.22	1
Benzene	ND		ug/kg	0.66	0.22	1
Toluene	ND		ug/kg	1.3	0.71	1
Ethylbenzene	ND		ug/kg	1.3	0.18	1
Chloromethane	ND		ug/kg	5.2	1.2	1
Bromomethane	ND		ug/kg	2.6	0.76	1
Vinyl chloride	ND		ug/kg	1.3	0.44	1
Chloroethane	ND		ug/kg	2.6	0.59	1
1,1-Dichloroethene	ND		ug/kg	1.3	0.31	1
trans-1,2-Dichloroethene	ND		ug/kg	2.0	0.18	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.66	0.18	1
1,2-Dichlorobenzene	ND		ug/kg	2.6	0.19	1
1,3-Dichlorobenzene	ND		ug/kg	2.6	0.19	1
1,4-Dichlorobenzene	ND		ug/kg	2.6	0.22	1
Methyl tert butyl ether	ND		ug/kg	2.6	0.26	1
p/m-Xylene	ND		ug/kg	2.6	0.74	1
o-Xylene	ND		ug/kg	1.3	0.38	1
Xylenes, Total	ND		ug/kg	1.3	0.38	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	0.23	1
1,2-Dichloroethene, Total	ND		ug/kg	1.3	0.18	1
Dibromomethane	ND		ug/kg	2.6	0.31	1
Styrene	ND		ug/kg	1.3	0.26	1
Dichlorodifluoromethane	ND		ug/kg	13	1.2	1
Acetone	ND		ug/kg	13	6.3	1
Carbon disulfide	ND		ug/kg	13	6.0	1
2-Butanone	9.6	J	ug/kg	13	2.9	1
Vinyl acetate	ND		ug/kg	13	2.8	1
4-Methyl-2-pentanone	ND		ug/kg	13	1.7	1
1,2,3-Trichloropropane	ND		ug/kg	2.6	0.17	1
2-Hexanone	ND		ug/kg	13	1.6	1
Bromochloromethane	ND		ug/kg	2.6	0.27	1
2,2-Dichloropropane	ND		ug/kg	2.6	0.26	1
1,2-Dibromoethane	ND		ug/kg	1.3	0.37	1
1,3-Dichloropropane	ND		ug/kg	2.6	0.22	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.66	0.17	1
Bromobenzene	ND		ug/kg	2.6	0.19	1
n-Butylbenzene	ND		ug/kg	1.3	0.22	1
sec-Butylbenzene	ND		ug/kg	1.3	0.19	1
tert-Butylbenzene	ND		ug/kg	2.6	0.16	1
o-Chlorotoluene	ND		ug/kg	2.6	0.25	1
p-Chlorotoluene	ND		ug/kg	2.6	0.14	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.9	1.3	1
Hexachlorobutadiene	ND		ug/kg	5.2	0.22	1
Isopropylbenzene	ND		ug/kg	1.3	0.14	1
p-Isopropyltoluene	ND		ug/kg	1.3	0.14	1
Naphthalene	ND		ug/kg	5.2	0.85	1
Acrylonitrile	ND		ug/kg	5.2	1.5	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.3	0.22	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.6	0.42	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.6	0.36	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.6	0.25	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.6	0.44	1
1,4-Dioxane	ND		ug/kg	100	46.	1
p-Diethylbenzene	ND		ug/kg	2.6	0.23	1
p-Ethyltoluene	ND		ug/kg	2.6	0.50	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.6	0.25	1
Ethyl ether	ND		ug/kg	2.6	0.45	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	6.6	1.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	99		70-130

Project Name: END2201

Project Number: END2201

Lab Number: L2270292
Addendum 02 06/19/2023

Report Date: 12/29/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D
 Analytical Date: 12/16/22 09:14
 Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03 Batch: WG1725166-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: END2201

Project Number: END2201

Lab Number: L2270292
Addendum 02 06/19/2023

Report Date: 12/29/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D
 Analytical Date: 12/16/22 09:14
 Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03 Batch: WG1725166-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: END2201

Project Number: END2201

Lab Number: L2270292
Addendum 02 06/19/2023

Report Date: 12/29/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D
 Analytical Date: 12/16/22 09:14
 Analyst: JIC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-03 Batch: WG1725166-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Lab Number: L2270292

Project Number: END2201

Report Date: 12/29/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03 Batch: WG1725166-3 WG1725166-4								
Methylene chloride	93		93		70-130	0		30
1,1-Dichloroethane	100		100		70-130	0		30
Chloroform	100		100		70-130	0		30
Carbon tetrachloride	109		109		70-130	0		30
1,2-Dichloropropane	97		97		70-130	0		30
Dibromochloromethane	96		95		70-130	1		30
1,1,2-Trichloroethane	97		97		70-130	0		30
Tetrachloroethene	107		105		70-130	2		30
Chlorobenzene	103		102		70-130	1		30
Trichlorofluoromethane	111		109		70-139	2		30
1,2-Dichloroethane	93		93		70-130	0		30
1,1,1-Trichloroethane	109		108		70-130	1		30
Bromodichloromethane	97		97		70-130	0		30
trans-1,3-Dichloropropene	97		97		70-130	0		30
cis-1,3-Dichloropropene	100		100		70-130	0		30
1,1-Dichloropropene	99		100		70-130	1		30
Bromoform	104		101		70-130	3		30
1,1,1,2-Tetrachloroethane	92		92		70-130	0		30
Benzene	101		100		70-130	1		30
Toluene	101		100		70-130	1		30
Ethylbenzene	101		100		70-130	1		30
Chloromethane	105		103		52-130	2		30
Bromomethane	117		116		57-147	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03 Batch: WG1725166-3 WG1725166-4								
Vinyl chloride	102		100		67-130	2		30
Chloroethane	93		91		50-151	2		30
1,1-Dichloroethene	107		106		65-135	1		30
trans-1,2-Dichloroethene	102		103		70-130	1		30
Trichloroethene	95		95		70-130	0		30
1,2-Dichlorobenzene	100		100		70-130	0		30
1,3-Dichlorobenzene	101		100		70-130	1		30
1,4-Dichlorobenzene	100		99		70-130	1		30
Methyl tert butyl ether	95		95		66-130	0		30
p/m-Xylene	104		103		70-130	1		30
o-Xylene	101		100		70-130	1		30
cis-1,2-Dichloroethene	101		101		70-130	0		30
Dibromomethane	98		98		70-130	0		30
Styrene	97		97		70-130	0		30
Dichlorodifluoromethane	113		110		30-146	3		30
Acetone	90		86		54-140	5		30
Carbon disulfide	95		94		59-130	1		30
2-Butanone	85		84		70-130	1		30
Vinyl acetate	83		84		70-130	1		30
4-Methyl-2-pentanone	94		92		70-130	2		30
1,2,3-Trichloropropane	92		91		68-130	1		30
2-Hexanone	81		80		70-130	1		30
Bromochloromethane	102		103		70-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03 Batch: WG1725166-3 WG1725166-4								
2,2-Dichloropropane	105		104		70-130	1		30
1,2-Dibromoethane	96		96		70-130	0		30
1,3-Dichloropropane	96		96		69-130	0		30
1,1,1,2-Tetrachloroethane	95		95		70-130	0		30
Bromobenzene	101		98		70-130	3		30
n-Butylbenzene	104		102		70-130	2		30
sec-Butylbenzene	105		102		70-130	3		30
tert-Butylbenzene	103		100		70-130	3		30
o-Chlorotoluene	98		96		70-130	2		30
p-Chlorotoluene	99		97		70-130	2		30
1,2-Dibromo-3-chloropropane	107		103		68-130	4		30
Hexachlorobutadiene	118		116		67-130	2		30
Isopropylbenzene	102		99		70-130	3		30
p-Isopropyltoluene	104		102		70-130	2		30
Naphthalene	99		97		70-130	2		30
Acrylonitrile	92		92		70-130	0		30
n-Propylbenzene	100		98		70-130	2		30
1,2,3-Trichlorobenzene	106		105		70-130	1		30
1,2,4-Trichlorobenzene	109		106		70-130	3		30
1,3,5-Trimethylbenzene	101		99		70-130	2		30
1,2,4-Trimethylbenzene	99		97		70-130	2		30
1,4-Dioxane	95		91		65-136	4		30
p-Diethylbenzene	103		100		70-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-03 Batch: WG1725166-3 WG1725166-4								
p-Ethyltoluene	101		98		70-130	3		30
1,2,4,5-Tetramethylbenzene	100		97		70-130	3		30
Ethyl ether	102		102		67-130	0		30
trans-1,4-Dichloro-2-butene	96		94		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		98		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	97		99		70-130

SEMIVOLATILES

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
 Client ID: A-4
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:50
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8270E
 Analytical Date: 12/20/22 10:09
 Analyst: LJG
 Percent Solids: 90%

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 04:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	19.	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	21.	1
Hexachlorobenzene	ND		ug/kg	110	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	25.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
1,2-Dichlorobenzene	ND		ug/kg	180	33.	1
1,3-Dichlorobenzene	ND		ug/kg	180	31.	1
1,4-Dichlorobenzene	ND		ug/kg	180	32.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	49.	1
2,4-Dinitrotoluene	ND		ug/kg	180	36.	1
2,6-Dinitrotoluene	ND		ug/kg	180	31.	1
Fluoranthene	160		ug/kg	110	21.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	28.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	31.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	18.	1
Hexachlorobutadiene	ND		ug/kg	180	27.	1
Hexachlorocyclopentadiene	ND		ug/kg	520	160	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	160	24.	1
Naphthalene	ND		ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	27.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	28.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	63.	1
Butyl benzyl phthalate	ND		ug/kg	180	46.	1
Di-n-butylphthalate	ND		ug/kg	180	35.	1
Di-n-octylphthalate	ND		ug/kg	180	62.	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
 Client ID: A-4
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:50
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	17.	1
Dimethyl phthalate	ND		ug/kg	180	38.	1
Benzo(a)anthracene	120		ug/kg	110	21.	1
Benzo(a)pyrene	160		ug/kg	150	45.	1
Benzo(b)fluoranthene	190		ug/kg	110	31.	1
Benzo(k)fluoranthene	62	J	ug/kg	110	29.	1
Chrysene	120		ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	150	28.	1
Anthracene	ND		ug/kg	110	36.	1
Benzo(ghi)perylene	110	J	ug/kg	150	22.	1
Fluorene	ND		ug/kg	180	18.	1
Phenanthrene	43	J	ug/kg	110	22.	1
Dibenzo(a,h)anthracene	24	J	ug/kg	110	21.	1
Indeno(1,2,3-cd)pyrene	120	J	ug/kg	150	26.	1
Pyrene	160		ug/kg	110	18.	1
Biphenyl	ND		ug/kg	420	24.	1
4-Chloroaniline	ND		ug/kg	180	33.	1
2-Nitroaniline	ND		ug/kg	180	35.	1
3-Nitroaniline	ND		ug/kg	180	34.	1
4-Nitroaniline	ND		ug/kg	180	76.	1
Dibenzofuran	ND		ug/kg	180	17.	1
2-Methylnaphthalene	ND		ug/kg	220	22.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	19.	1
Acetophenone	ND		ug/kg	180	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	35.	1
p-Chloro-m-cresol	ND		ug/kg	180	27.	1
2-Chlorophenol	ND		ug/kg	180	22.	1
2,4-Dichlorophenol	ND		ug/kg	160	29.	1
2,4-Dimethylphenol	ND		ug/kg	180	60.	1
2-Nitrophenol	ND		ug/kg	400	69.	1
4-Nitrophenol	ND		ug/kg	260	75.	1
2,4-Dinitrophenol	ND		ug/kg	880	85.	1
4,6-Dinitro-o-cresol	ND		ug/kg	480	88.	1
Pentachlorophenol	ND		ug/kg	150	40.	1
Phenol	ND		ug/kg	180	28.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	29.	1

Project Name: END2201

Lab Number: L2270292
Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
Client ID: A-4
Sample Location: 321 MANOR RDDate Collected: 12/14/22 10:50
Date Received: 12/14/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	180	35.	1
Benzoic Acid	ND		ug/kg	590	180	1
Benzyl Alcohol	ND		ug/kg	180	56.	1
Carbazole	ND		ug/kg	180	18.	1
1,4-Dioxane	ND		ug/kg	27	8.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	93		25-120
Phenol-d6	93		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	92		30-120
2,4,6-Tribromophenol	92		10-136
4-Terphenyl-d14	74		18-120

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8270E
 Analytical Date: 12/20/22 10:33
 Analyst: LJG
 Percent Solids: 88%

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 04:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	19.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	21.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	25.	1
2-Chloronaphthalene	ND		ug/kg	190	18.	1
1,2-Dichlorobenzene	ND		ug/kg	190	34.	1
1,3-Dichlorobenzene	ND		ug/kg	190	32.	1
1,4-Dichlorobenzene	ND		ug/kg	190	33.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	50.	1
2,4-Dinitrotoluene	ND		ug/kg	190	37.	1
2,6-Dinitrotoluene	ND		ug/kg	190	32.	1
Fluoranthene	530		ug/kg	110	21.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	28.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	32.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	19.	1
Hexachlorobutadiene	ND		ug/kg	190	27.	1
Hexachlorocyclopentadiene	ND		ug/kg	540	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	170	24.	1
Naphthalene	ND		ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	29.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	65.	1
Butyl benzyl phthalate	ND		ug/kg	190	47.	1
Di-n-butylphthalate	ND		ug/kg	190	36.	1
Di-n-octylphthalate	ND		ug/kg	190	64.	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	17.	1
Dimethyl phthalate	ND		ug/kg	190	39.	1
Benzo(a)anthracene	290		ug/kg	110	21.	1
Benzo(a)pyrene	280		ug/kg	150	46.	1
Benzo(b)fluoranthene	320		ug/kg	110	32.	1
Benzo(k)fluoranthene	120		ug/kg	110	30.	1
Chrysene	310		ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	79	J	ug/kg	110	36.	1
Benzo(ghi)perylene	150		ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	200		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	39	J	ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	170		ug/kg	150	26.	1
Pyrene	500		ug/kg	110	19.	1
Biphenyl	ND		ug/kg	430	24.	1
4-Chloroaniline	ND		ug/kg	190	34.	1
2-Nitroaniline	ND		ug/kg	190	36.	1
3-Nitroaniline	ND		ug/kg	190	35.	1
4-Nitroaniline	ND		ug/kg	190	78.	1
Dibenzofuran	ND		ug/kg	190	18.	1
2-Methylnaphthalene	ND		ug/kg	220	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	36.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	22.	1
2,4-Dichlorophenol	ND		ug/kg	170	30.	1
2,4-Dimethylphenol	ND		ug/kg	190	62.	1
2-Nitrophenol	ND		ug/kg	400	70.	1
4-Nitrophenol	ND		ug/kg	260	76.	1
2,4-Dinitrophenol	ND		ug/kg	900	87.	1
4,6-Dinitro-o-cresol	ND		ug/kg	490	90.	1
Pentachlorophenol	ND		ug/kg	150	41.	1
Phenol	ND		ug/kg	190	28.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	29.	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	36.	1
Benzoic Acid	ND		ug/kg	610	190	1
Benzyl Alcohol	ND		ug/kg	190	57.	1
Carbazole	19	J	ug/kg	190	18.	1
1,4-Dioxane	ND		ug/kg	28	8.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		25-120
Phenol-d6	64		10-120
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	68		30-120
2,4,6-Tribromophenol	69		10-136
4-Terphenyl-d14	69		18-120

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8270E
 Analytical Date: 12/20/22 09:46
 Analyst: LJG
 Percent Solids: 87%

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 04:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	20.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	22.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	26.	1
2-Chloronaphthalene	ND		ug/kg	190	19.	1
1,2-Dichlorobenzene	ND		ug/kg	190	34.	1
1,3-Dichlorobenzene	ND		ug/kg	190	32.	1
1,4-Dichlorobenzene	ND		ug/kg	190	33.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	50.	1
2,4-Dinitrotoluene	ND		ug/kg	190	38.	1
2,6-Dinitrotoluene	ND		ug/kg	190	32.	1
Fluoranthene	ND		ug/kg	110	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	29.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	32.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	19.	1
Hexachlorobutadiene	ND		ug/kg	190	28.	1
Hexachlorocyclopentadiene	ND		ug/kg	540	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	170	24.	1
Naphthalene	ND		ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	29.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	65.	1
Butyl benzyl phthalate	ND		ug/kg	190	48.	1
Di-n-butylphthalate	ND		ug/kg	190	36.	1
Di-n-octylphthalate	ND		ug/kg	190	64.	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	17.	1
Dimethyl phthalate	ND		ug/kg	190	40.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	46.	1
Benzo(b)fluoranthene	ND		ug/kg	110	32.	1
Benzo(k)fluoranthene	ND		ug/kg	110	30.	1
Chrysene	ND		ug/kg	110	20.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	ND		ug/kg	110	37.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	ND		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	ND		ug/kg	110	19.	1
Biphenyl	ND		ug/kg	430	24.	1
4-Chloroaniline	ND		ug/kg	190	34.	1
2-Nitroaniline	ND		ug/kg	190	36.	1
3-Nitroaniline	ND		ug/kg	190	36.	1
4-Nitroaniline	ND		ug/kg	190	78.	1
Dibenzofuran	ND		ug/kg	190	18.	1
2-Methylnaphthalene	ND		ug/kg	230	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	36.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	22.	1
2,4-Dichlorophenol	ND		ug/kg	170	30.	1
2,4-Dimethylphenol	ND		ug/kg	190	62.	1
2-Nitrophenol	ND		ug/kg	410	71.	1
4-Nitrophenol	ND		ug/kg	260	77.	1
2,4-Dinitrophenol	ND		ug/kg	900	88.	1
4,6-Dinitro-o-cresol	ND		ug/kg	490	90.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	ND		ug/kg	190	28.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	30.	1

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	36.	1
Benzoic Acid	ND		ug/kg	610	190	1
Benzyl Alcohol	ND		ug/kg	190	58.	1
Carbazole	ND		ug/kg	190	18.	1
1,4-Dioxane	ND		ug/kg	28	8.7	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	78		25-120
Phenol-d6	78		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	82		30-120
2,4,6-Tribromophenol	79		10-136
4-Terphenyl-d14	70		18-120

Project Name: END2201

Project Number: END2201

Lab Number: L2270292
Addendum 02 06/19/2023

Report Date: 12/29/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270E
 Analytical Date: 12/19/22 22:23
 Analyst: MG

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 13:21

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1724786-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	30.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	29.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: END2201

Project Number: END2201

Lab Number: L2270292
Addendum 02 06/19/2023

Report Date: 12/29/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270E
 Analytical Date: 12/19/22 22:23
 Analyst: MG

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 13:21

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1724786-1					
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	21.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	19.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	360	62.

Project Name: END2201

Project Number: END2201

Lab Number: L2270292
Addendum 02 06/19/2023

Report Date: 12/29/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270E
 Analytical Date: 12/19/22 22:23
 Analyst: MG

Extraction Method: EPA 3546
 Extraction Date: 12/18/22 13:21

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1724786-1					
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Benzoic Acid	ND		ug/kg	530	170
Benzyl Alcohol	ND		ug/kg	160	50.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		25-120
Phenol-d6	80		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	70		30-120
2,4,6-Tribromophenol	59		10-136
4-Terphenyl-d14	86		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Lab Number: L2270292

Project Number: END2201

Report Date: 12/29/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1724786-2 WG1724786-3								
Acenaphthene	75		81		31-137	8		50
1,2,4-Trichlorobenzene	68		83		38-107	20		50
Hexachlorobenzene	62		77		40-140	22		50
Bis(2-chloroethyl)ether	70		80		40-140	13		50
2-Chloronaphthalene	76		86		40-140	12		50
1,2-Dichlorobenzene	76		75		40-140	1		50
1,3-Dichlorobenzene	69		76		40-140	10		50
1,4-Dichlorobenzene	66		76		28-104	14		50
3,3'-Dichlorobenzidine	56		62		40-140	10		50
2,4-Dinitrotoluene	74		80		40-132	8		50
2,6-Dinitrotoluene	89		85		40-140	5		50
Fluoranthene	72		82		40-140	13		50
4-Chlorophenyl phenyl ether	62		79		40-140	24		50
4-Bromophenyl phenyl ether	66		76		40-140	14		50
Bis(2-chloroisopropyl)ether	85		84		40-140	1		50
Bis(2-chloroethoxy)methane	85		89		40-117	5		50
Hexachlorobutadiene	79		75		40-140	5		50
Hexachlorocyclopentadiene	75		80		40-140	6		50
Hexachloroethane	68		77		40-140	12		50
Isophorone	69		89		40-140	25		50
Naphthalene	68		81		40-140	17		50
Nitrobenzene	70		85		40-140	19		50
NDPA/DPA	62		82		36-157	28		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Lab Number: L2270292

Project Number: END2201

Report Date: 12/29/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1724786-2 WG1724786-3								
n-Nitrosodi-n-propylamine	81		88		32-121	8		50
Bis(2-ethylhexyl)phthalate	88		82		40-140	7		50
Butyl benzyl phthalate	82		75		40-140	9		50
Di-n-butylphthalate	85		84		40-140	1		50
Di-n-octylphthalate	84		92		40-140	9		50
Diethyl phthalate	69		81		40-140	16		50
Dimethyl phthalate	93		83		40-140	11		50
Benzo(a)anthracene	80		83		40-140	4		50
Benzo(a)pyrene	76		90		40-140	17		50
Benzo(b)fluoranthene	73		84		40-140	14		50
Benzo(k)fluoranthene	74		86		40-140	15		50
Chrysene	80		82		40-140	2		50
Acenaphthylene	100		93		40-140	7		50
Anthracene	77		90		40-140	16		50
Benzo(ghi)perylene	75		89		40-140	17		50
Fluorene	63		82		40-140	26		50
Phenanthrene	70		86		40-140	21		50
Dibenzo(a,h)anthracene	80		94		40-140	16		50
Indeno(1,2,3-cd)pyrene	83		100		40-140	19		50
Pyrene	75		83		35-142	10		50
Biphenyl	82		86		37-127	5		50
4-Chloroaniline	20	Q	34	Q	40-140	52	Q	50
2-Nitroaniline	84		85		47-134	1		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Lab Number: L2270292

Project Number: END2201

Report Date: 12/29/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1724786-2 WG1724786-3								
3-Nitroaniline	43		49		26-129	13		50
4-Nitroaniline	60		79		41-125	27		50
Dibenzofuran	75		81		40-140	8		50
2-Methylnaphthalene	70		84		40-140	18		50
1,2,4,5-Tetrachlorobenzene	78		87		40-117	11		50
Acetophenone	90		95		14-144	5		50
2,4,6-Trichlorophenol	96		89		30-130	8		50
p-Chloro-m-cresol	74		90		26-103	20		50
2-Chlorophenol	75		85		25-102	13		50
2,4-Dichlorophenol	71		90		30-130	24		50
2,4-Dimethylphenol	70		84		30-130	18		50
2-Nitrophenol	75		95		30-130	24		50
4-Nitrophenol	74		82		11-114	10		50
2,4-Dinitrophenol	54		60		4-130	11		50
4,6-Dinitro-o-cresol	61		73		10-130	18		50
Pentachlorophenol	54		65		17-109	18		50
Phenol	68		83		26-90	20		50
2-Methylphenol	86		84		30-130.	2		50
3-Methylphenol/4-Methylphenol	82		87		30-130	6		50
2,4,5-Trichlorophenol	83		80		30-130	4		50
Benzoic Acid	39		43		10-110	10		50
Benzyl Alcohol	65		79		40-140	19		50
Carbazole	86		86		54-128	0		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1724786-2 WG1724786-3								
1,4-Dioxane	50		56		40-140	11		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	83		92		25-120
Phenol-d6	76		89		10-120
Nitrobenzene-d5	75		84		23-120
2-Fluorobiphenyl	85		88		30-120
2,4,6-Tribromophenol	71		81		10-136
4-Terphenyl-d14	76		85		18-120

PCBS

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
 Client ID: A-4
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:50
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8082A
 Analytical Date: 12/20/22 10:18
 Analyst: JM
 Percent Solids: 90%

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 06:35
 Cleanup Method: EPA 3665A
 Cleanup Date: 12/19/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/20/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.2	3.22	1	A
Aroclor 1221	ND		ug/kg	36.2	3.63	1	A
Aroclor 1232	ND		ug/kg	36.2	7.69	1	A
Aroclor 1242	ND		ug/kg	36.2	4.89	1	A
Aroclor 1248	ND		ug/kg	36.2	5.44	1	A
Aroclor 1254	ND		ug/kg	36.2	3.97	1	A
Aroclor 1260	ND		ug/kg	36.2	6.70	1	B
Aroclor 1262	ND		ug/kg	36.2	4.60	1	A
Aroclor 1268	ND		ug/kg	36.2	3.76	1	A
PCBs, Total	ND		ug/kg	36.2	3.22	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	67		30-150	B

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8082A
 Analytical Date: 12/20/22 10:49
 Analyst: JM
 Percent Solids: 88%

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 06:35
 Cleanup Method: EPA 3665A
 Cleanup Date: 12/19/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/20/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.1	3.21	1	A
Aroclor 1221	ND		ug/kg	36.1	3.62	1	A
Aroclor 1232	ND		ug/kg	36.1	7.66	1	A
Aroclor 1242	ND		ug/kg	36.1	4.87	1	A
Aroclor 1248	ND		ug/kg	36.1	5.42	1	A
Aroclor 1254	ND		ug/kg	36.1	3.95	1	A
Aroclor 1260	ND		ug/kg	36.1	6.68	1	B
Aroclor 1262	ND		ug/kg	36.1	4.59	1	A
Aroclor 1268	ND		ug/kg	36.1	3.74	1	A
PCBs, Total	ND		ug/kg	36.1	3.21	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	54		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	60		30-150	B

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8082A
 Analytical Date: 12/20/22 10:57
 Analyst: JM
 Percent Solids: 87%

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 06:35
 Cleanup Method: EPA 3665A
 Cleanup Date: 12/19/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/20/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	37.6	3.34	1	A
Aroclor 1221	ND		ug/kg	37.6	3.77	1	A
Aroclor 1232	ND		ug/kg	37.6	7.98	1	A
Aroclor 1242	ND		ug/kg	37.6	5.07	1	A
Aroclor 1248	ND		ug/kg	37.6	5.64	1	A
Aroclor 1254	ND		ug/kg	37.6	4.12	1	A
Aroclor 1260	ND		ug/kg	37.6	6.95	1	A
Aroclor 1262	ND		ug/kg	37.6	4.78	1	A
Aroclor 1268	ND		ug/kg	37.6	3.90	1	A
PCBs, Total	ND		ug/kg	37.6	3.34	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	61		30-150	B

Project Name: END2201

Project Number: END2201

Lab Number: L2270292
Addendum 02 06/19/2023

Report Date: 12/29/22

Method Blank Analysis
Batch Quality ControlAnalytical Method: 1,8082A
Analytical Date: 12/19/22 10:52
Analyst: JMExtraction Method: EPA 3546
Extraction Date: 12/18/22 09:36
Cleanup Method: EPA 3665A
Cleanup Date: 12/19/22
Cleanup Method: EPA 3660B
Cleanup Date: 12/19/22

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-03 Batch: WG1724723-1						
Aroclor 1016	ND		ug/kg	32.2	2.86	A
Aroclor 1221	ND		ug/kg	32.2	3.23	A
Aroclor 1232	ND		ug/kg	32.2	6.84	A
Aroclor 1242	ND		ug/kg	32.2	4.35	A
Aroclor 1248	ND		ug/kg	32.2	4.84	A
Aroclor 1254	ND		ug/kg	32.2	3.53	A
Aroclor 1260	ND		ug/kg	32.2	5.96	A
Aroclor 1262	ND		ug/kg	32.2	4.10	A
Aroclor 1268	ND		ug/kg	32.2	3.34	A
PCBs, Total	ND		ug/kg	32.2	2.86	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	62		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG1724723-2 WG1724723-3									
Aroclor 1016	58		73		40-140	23		50	A
Aroclor 1260	46		57		40-140	21		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		62		30-150	A
Decachlorobiphenyl	39		48		30-150	A
2,4,5,6-Tetrachloro-m-xylene	55		66		30-150	B
Decachlorobiphenyl	43		52		30-150	B

PESTICIDES

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
 Client ID: A-4
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:50
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8081B
 Analytical Date: 12/20/22 21:40
 Analyst: AKM
 Percent Solids: 90%

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 09:27
 Cleanup Method: EPA 3620B
 Cleanup Date: 12/20/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.69	0.330	1	A
Lindane	ND		ug/kg	0.703	0.314	1	A
Alpha-BHC	ND		ug/kg	0.703	0.200	1	A
Beta-BHC	ND		ug/kg	1.69	0.640	1	A
Heptachlor	ND		ug/kg	0.844	0.378	1	A
Aldrin	ND		ug/kg	1.69	0.594	1	A
Heptachlor epoxide	ND		ug/kg	3.16	0.949	1	A
Endrin	ND		ug/kg	0.703	0.288	1	A
Endrin aldehyde	ND		ug/kg	2.11	0.738	1	A
Endrin ketone	ND		ug/kg	1.69	0.434	1	A
Dieldrin	ND		ug/kg	1.05	0.527	1	A
4,4'-DDE	6.28		ug/kg	1.69	0.390	1	B
4,4'-DDD	9.12		ug/kg	1.69	0.602	1	B
4,4'-DDT	3.52	IP	ug/kg	1.69	1.36	1	A
Endosulfan I	ND		ug/kg	1.69	0.399	1	A
Endosulfan II	ND		ug/kg	1.69	0.564	1	A
Endosulfan sulfate	ND		ug/kg	0.703	0.335	1	A
Methoxychlor	ND		ug/kg	3.16	0.984	1	A
Toxaphene	ND		ug/kg	31.6	8.86	1	A
cis-Chlordane	ND	IP	ug/kg	2.11	0.588	1	A
trans-Chlordane	1.12	J	ug/kg	2.11	0.557	1	A
Chlordane	ND		ug/kg	14.1	5.59	1	A

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
 Client ID: A-4
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:50
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	87		30-150	A
Decachlorobiphenyl	78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	87		30-150	B
Decachlorobiphenyl	70		30-150	B

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8081B
 Analytical Date: 12/20/22 23:18
 Analyst: AKM
 Percent Solids: 88%

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 09:27
 Cleanup Method: EPA 3620B
 Cleanup Date: 12/20/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.76	0.344	1	A
Lindane	ND		ug/kg	0.733	0.328	1	A
Alpha-BHC	ND		ug/kg	0.733	0.208	1	A
Beta-BHC	ND		ug/kg	1.76	0.667	1	A
Heptachlor	ND		ug/kg	0.879	0.394	1	A
Aldrin	ND		ug/kg	1.76	0.619	1	A
Heptachlor epoxide	ND		ug/kg	3.30	0.989	1	A
Endrin	ND		ug/kg	0.733	0.300	1	A
Endrin aldehyde	ND		ug/kg	2.20	0.769	1	A
Endrin ketone	ND		ug/kg	1.76	0.453	1	A
Dieldrin	ND		ug/kg	1.10	0.550	1	A
4,4'-DDE	10.6		ug/kg	1.76	0.407	1	B
4,4'-DDD	3.36		ug/kg	1.76	0.627	1	B
4,4'-DDT	3.23		ug/kg	1.76	1.41	1	B
Endosulfan I	ND		ug/kg	1.76	0.415	1	A
Endosulfan II	ND		ug/kg	1.76	0.588	1	A
Endosulfan sulfate	ND		ug/kg	0.733	0.349	1	A
Methoxychlor	ND		ug/kg	3.30	1.02	1	A
Toxaphene	ND		ug/kg	33.0	9.23	1	A
cis-Chlordane	ND	IP	ug/kg	2.20	0.613	1	B
trans-Chlordane	ND		ug/kg	2.20	0.580	1	B
Chlordane	ND		ug/kg	14.6	5.82	1	A

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	57		30-150	B

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8081B
 Analytical Date: 12/21/22 09:57
 Analyst: AKM
 Percent Solids: 87%

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 09:27
 Cleanup Method: EPA 3620B
 Cleanup Date: 12/20/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.78	0.348	1	A
Lindane	ND		ug/kg	0.741	0.331	1	A
Alpha-BHC	ND		ug/kg	0.741	0.210	1	A
Beta-BHC	ND		ug/kg	1.78	0.674	1	A
Heptachlor	ND		ug/kg	0.889	0.398	1	A
Aldrin	ND		ug/kg	1.78	0.626	1	A
Heptachlor epoxide	ND		ug/kg	3.33	1.00	1	A
Endrin	ND		ug/kg	0.741	0.304	1	A
Endrin aldehyde	ND		ug/kg	2.22	0.778	1	A
Endrin ketone	ND		ug/kg	1.78	0.458	1	A
Dieldrin	ND		ug/kg	1.11	0.556	1	A
4,4'-DDE	ND		ug/kg	1.78	0.411	1	B
4,4'-DDD	ND		ug/kg	1.78	0.634	1	A
4,4'-DDT	ND		ug/kg	1.78	1.43	1	A
Endosulfan I	ND		ug/kg	1.78	0.420	1	A
Endosulfan II	ND		ug/kg	1.78	0.594	1	A
Endosulfan sulfate	ND		ug/kg	0.741	0.353	1	A
Methoxychlor	ND		ug/kg	3.33	1.04	1	A
Toxaphene	ND		ug/kg	33.3	9.33	1	A
cis-Chlordane	ND		ug/kg	2.22	0.619	1	A
trans-Chlordane	1.72	J	ug/kg	2.22	0.587	1	A
Chlordane	ND		ug/kg	14.8	5.89	1	A

Project Name: END2201

Lab Number: L2270292

Addendum 02 06/19/2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	65		30-150	B

Project Name: END2201

Project Number: END2201

Lab Number: L2270292
Addendum 02 06/19/2023

Report Date: 12/29/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8081B
 Analytical Date: 12/20/22 19:29
 Analyst: MSF

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 09:27
 Cleanup Method: EPA 3620B
 Cleanup Date: 12/20/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/20/22

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01-03 Batch: WG1725013-1						
Delta-BHC	ND		ug/kg	1.56	0.306	A
Lindane	ND		ug/kg	0.651	0.291	A
Alpha-BHC	ND		ug/kg	0.651	0.185	A
Beta-BHC	ND		ug/kg	1.56	0.592	A
Heptachlor	ND		ug/kg	0.781	0.350	A
Aldrin	ND		ug/kg	1.56	0.550	A
Heptachlor epoxide	ND		ug/kg	2.93	0.879	A
Endrin	ND		ug/kg	0.651	0.267	A
Endrin aldehyde	ND		ug/kg	1.95	0.684	A
Endrin ketone	ND		ug/kg	1.56	0.402	A
Dieldrin	ND		ug/kg	0.976	0.488	A
4,4'-DDE	ND		ug/kg	1.56	0.361	A
4,4'-DDD	ND		ug/kg	1.56	0.557	A
4,4'-DDT	ND		ug/kg	1.56	1.26	A
Endosulfan I	ND		ug/kg	1.56	0.369	A
Endosulfan II	ND		ug/kg	1.56	0.522	A
Endosulfan sulfate	ND		ug/kg	0.651	0.310	A
Methoxychlor	ND		ug/kg	2.93	0.911	A
Toxaphene	ND		ug/kg	29.3	8.20	A
cis-Chlordane	ND		ug/kg	1.95	0.544	A
trans-Chlordane	ND		ug/kg	1.95	0.516	A
Chlordane	ND		ug/kg	13.0	5.18	A

Project Name: END2201

Project Number: END2201

Lab Number: L2270292
Addendum 02 06/19/2023

Report Date: 12/29/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8081B
 Analytical Date: 12/20/22 19:29
 Analyst: MSF

Extraction Method: EPA 3546
 Extraction Date: 12/19/22 09:27
 Cleanup Method: EPA 3620B
 Cleanup Date: 12/20/22
 Cleanup Method: EPA 3660B
 Cleanup Date: 12/20/22

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01-03 Batch: WG1725013-1						

Surrogate	%Recovery	Qualifier	Acceptance	
			Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	59		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG1725013-2 WG1725013-3									
Delta-BHC	74		80		30-150	8		30	A
Lindane	93		100		30-150	7		30	A
Alpha-BHC	96		104		30-150	8		30	A
Beta-BHC	82		90		30-150	9		30	A
Heptachlor	97		104		30-150	7		30	A
Aldrin	93		101		30-150	8		30	A
Heptachlor epoxide	70		78		30-150	11		30	A
Endrin	90		97		30-150	7		30	A
Endrin aldehyde	70		72		30-150	3		30	A
Endrin ketone	91		97		30-150	6		30	A
Dieldrin	96		105		30-150	9		30	A
4,4'-DDE	91		101		30-150	10		30	A
4,4'-DDD	97		109		30-150	12		30	A
4,4'-DDT	95		103		30-150	8		30	A
Endosulfan I	85		96		30-150	12		30	A
Endosulfan II	90		95		30-150	5		30	A
Endosulfan sulfate	72		74		30-150	3		30	A
Methoxychlor	95		100		30-150	5		30	A
cis-Chlordane	90		100		30-150	11		30	A
trans-Chlordane	112		123		30-150	9		30	A

Lab Control Sample Analysis Batch Quality Control

Project Name: END2201
Project Number: END2201

Lab Number: L2270292
Report Date: 12/29/22

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG1725013-2 WG1725013-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene	78		86		30-150	A
Decachlorobiphenyl	87		90		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		84		30-150	B
Decachlorobiphenyl	75		73		30-150	B

METALS

Project Name: END2201

Lab Number: Addendum 2070292 2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
 Client ID: A-4
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:50
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil
 Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7880		mg/kg	8.66	2.34	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Antimony, Total	2.92	J	mg/kg	4.33	0.329	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Arsenic, Total	9.70		mg/kg	0.866	0.180	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Barium, Total	45.7		mg/kg	0.866	0.151	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Beryllium, Total	0.569		mg/kg	0.433	0.029	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Cadmium, Total	ND		mg/kg	0.866	0.085	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Calcium, Total	1730		mg/kg	8.66	3.03	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Chromium, Total	21.5		mg/kg	0.866	0.083	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Cobalt, Total	9.76		mg/kg	1.73	0.144	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Copper, Total	35.7		mg/kg	0.866	0.224	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Iron, Total	26900		mg/kg	4.33	0.782	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Lead, Total	36.9		mg/kg	4.33	0.232	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Magnesium, Total	2070		mg/kg	8.66	1.33	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Manganese, Total	267		mg/kg	0.866	0.138	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Mercury, Total	0.086		mg/kg	0.070	0.046	1	12/20/22 22:27	12/21/22 07:39	EPA 7471B	1,7471B	DMB
Nickel, Total	9.16		mg/kg	2.16	0.210	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Potassium, Total	866		mg/kg	216	12.5	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Selenium, Total	ND		mg/kg	1.73	0.224	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Silver, Total	ND		mg/kg	0.433	0.245	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Sodium, Total	125	J	mg/kg	173	2.73	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Thallium, Total	ND		mg/kg	1.73	0.273	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Vanadium, Total	32.4		mg/kg	0.866	0.176	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB
Zinc, Total	53.8		mg/kg	4.33	0.254	2	12/15/22 20:11	12/16/22 10:51	EPA 3050B	1,6010D	DMB



Project Name: END2201

Lab Number: Addendum 270292 2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil
 Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	10800		mg/kg	8.88	2.40	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Antimony, Total	2.66	J	mg/kg	4.44	0.338	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Arsenic, Total	6.19		mg/kg	0.888	0.185	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Barium, Total	70.1		mg/kg	0.888	0.154	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Beryllium, Total	0.604		mg/kg	0.444	0.029	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Cadmium, Total	ND		mg/kg	0.888	0.087	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Calcium, Total	2050		mg/kg	8.88	3.11	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Chromium, Total	14.6		mg/kg	0.888	0.085	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Cobalt, Total	5.80		mg/kg	1.78	0.147	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Copper, Total	39.4		mg/kg	0.888	0.229	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Iron, Total	13900		mg/kg	4.44	0.802	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Lead, Total	163		mg/kg	4.44	0.238	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Magnesium, Total	3010		mg/kg	8.88	1.37	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Manganese, Total	273		mg/kg	0.888	0.141	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Mercury, Total	0.105		mg/kg	0.072	0.047	1	12/15/22 21:10	12/17/22 12:23	EPA 7471B	1,7471B	DJR
Nickel, Total	19.6		mg/kg	2.22	0.215	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Potassium, Total	395		mg/kg	222	12.8	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Selenium, Total	ND		mg/kg	1.78	0.229	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Silver, Total	ND		mg/kg	0.444	0.251	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Sodium, Total	122	J	mg/kg	178	2.80	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Thallium, Total	ND		mg/kg	1.78	0.280	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Vanadium, Total	29.5		mg/kg	0.888	0.180	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB
Zinc, Total	61.1		mg/kg	4.44	0.260	2	12/15/22 20:11	12/16/22 10:47	EPA 3050B	1,6010D	DMB



Project Name: END2201

Lab Number: Addendum 270292 2023

Project Number: END2201

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil
 Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	11700		mg/kg	45.3	12.2	10	12/15/22 20:11	12/16/22 15:48	EPA 3050B	1,6010D	MRC
Antimony, Total	2.31	J	mg/kg	4.53	0.344	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Arsenic, Total	4.07		mg/kg	0.906	0.188	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Barium, Total	34.9		mg/kg	0.906	0.158	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Beryllium, Total	0.339	J	mg/kg	0.453	0.030	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Cadmium, Total	ND		mg/kg	0.906	0.089	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Calcium, Total	7960		mg/kg	9.06	3.17	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Chromium, Total	23.3		mg/kg	0.906	0.087	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Cobalt, Total	15.2		mg/kg	1.81	0.150	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Copper, Total	59.6		mg/kg	0.906	0.234	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Iron, Total	19900		mg/kg	22.6	4.09	10	12/15/22 20:11	12/16/22 15:48	EPA 3050B	1,6010D	MRC
Lead, Total	11.7		mg/kg	4.53	0.243	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Magnesium, Total	7020		mg/kg	9.06	1.40	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Manganese, Total	353		mg/kg	0.906	0.144	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Mercury, Total	ND		mg/kg	0.079	0.051	1	12/15/22 21:10	12/17/22 12:33	EPA 7471B	1,7471B	DJR
Nickel, Total	20.9		mg/kg	2.26	0.219	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Potassium, Total	990		mg/kg	226	13.0	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Selenium, Total	ND		mg/kg	1.81	0.234	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Silver, Total	ND		mg/kg	0.453	0.256	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Sodium, Total	448		mg/kg	181	2.85	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Thallium, Total	ND		mg/kg	1.81	0.285	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Vanadium, Total	35.2		mg/kg	0.906	0.184	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB
Zinc, Total	48.0		mg/kg	4.53	0.265	2	12/15/22 20:11	12/16/22 11:22	EPA 3050B	1,6010D	DMB



Project Name: END2201
Project Number: END2201

Lab Number: 222792923
Report Date: 12/29/22

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1723839-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Antimony, Total	ND		mg/kg	2.00	0.152	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Arsenic, Total	ND		mg/kg	0.400	0.083	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Barium, Total	ND		mg/kg	0.400	0.070	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Beryllium, Total	ND		mg/kg	0.200	0.013	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Cadmium, Total	ND		mg/kg	0.400	0.039	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Calcium, Total	ND		mg/kg	4.00	1.40	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Chromium, Total	ND		mg/kg	0.400	0.038	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Cobalt, Total	ND		mg/kg	0.800	0.066	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Copper, Total	ND		mg/kg	0.400	0.103	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Iron, Total	ND		mg/kg	2.00	0.361	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Lead, Total	ND		mg/kg	2.00	0.107	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Magnesium, Total	ND		mg/kg	4.00	0.616	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Manganese, Total	ND		mg/kg	0.400	0.064	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Nickel, Total	ND		mg/kg	1.00	0.097	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Potassium, Total	ND		mg/kg	100	5.76	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Selenium, Total	ND		mg/kg	0.800	0.103	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Silver, Total	ND		mg/kg	0.200	0.113	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Sodium, Total	3.13	J	mg/kg	80.0	1.26	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Thallium, Total	ND		mg/kg	0.800	0.126	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Vanadium, Total	ND		mg/kg	0.400	0.081	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB
Zinc, Total	ND		mg/kg	2.00	0.117	1	12/15/22 20:11	12/16/22 10:29	1,6010D	DMB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-03 Batch: WG1723840-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	12/15/22 21:10	12/17/22 11:57	1,7471B	DJR



Project Name: END2201

Lab Number: 220702923

Project Number: END2201

Report Date: 12/29/22

Method Blank Analysis Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1725574-1									
Mercury, Total	ND	mg/kg	0.083	0.054	1	12/20/22 22:27	12/21/22 07:02	1,7471B	DMB

Prep Information

Digestion Method: EPA 7471B



Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1723839-2 SRM Lot Number: D116-540								
Aluminum, Total	90		-		45-155	-		
Antimony, Total	164		-		2-205	-		
Arsenic, Total	112		-		82-119	-		
Barium, Total	108		-		82-118	-		
Beryllium, Total	114		-		82-118	-		
Cadmium, Total	113		-		82-118	-		
Calcium, Total	108		-		81-119	-		
Chromium, Total	111		-		81-118	-		
Cobalt, Total	112		-		83-117	-		
Copper, Total	117		-		83-117	-		
Iron, Total	113		-		58-142	-		
Lead, Total	115		-		83-117	-		
Magnesium, Total	102		-		75-125	-		
Manganese, Total	108		-		82-118	-		
Nickel, Total	112		-		82-118	-		
Potassium, Total	104		-		68-131	-		
Selenium, Total	120		-		78-122	-		
Silver, Total	111		-		79-121	-		
Sodium, Total	109		-		71-130	-		
Thallium, Total	115		-		80-120	-		
Vanadium, Total	112		-		78-122	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1723839-2 SRM Lot Number: D116-540					
Zinc, Total	115	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 02-03 Batch: WG1723840-2 SRM Lot Number: D116-540					
Mercury, Total	103	-	58-142	-	
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1725574-2 SRM Lot Number: D116-540					
Mercury, Total	102	-	58-142	-	

Matrix Spike Analysis Batch Quality Control

Project Name: END2201

Lab Number: L2270292

Project Number: END2201

Report Date: 12/29/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1723839-3 QC Sample: L2270292-01 Client ID: A-4												
Aluminum, Total	7880	176	10800	1660	Q	-	-		75-125	-		20
Antimony, Total	2.92J	44	42.6	97		-	-		75-125	-		20
Arsenic, Total	9.70	10.6	19.6	94		-	-		75-125	-		20
Barium, Total	45.7	176	228	103		-	-		75-125	-		20
Beryllium, Total	0.569	4.4	4.95	99		-	-		75-125	-		20
Cadmium, Total	ND	4.67	4.45	95		-	-		75-125	-		20
Calcium, Total	1730	881	3750	229	Q	-	-		75-125	-		20
Chromium, Total	21.5	17.6	36.1	83		-	-		75-125	-		20
Cobalt, Total	9.76	44	48.9	89		-	-		75-125	-		20
Copper, Total	35.7	22	64.4	130	Q	-	-		75-125	-		20
Iron, Total	26900	88.1	22400	0	Q	-	-		75-125	-		20
Lead, Total	36.9	46.7	109	154	Q	-	-		75-125	-		20
Magnesium, Total	2070	881	4400	264	Q	-	-		75-125	-		20
Manganese, Total	267	44	309	95		-	-		75-125	-		20
Nickel, Total	9.16	44	54.2	102		-	-		75-125	-		20
Potassium, Total	866	881	2120	142	Q	-	-		75-125	-		20
Selenium, Total	ND	10.6	10.0	95		-	-		75-125	-		20
Silver, Total	ND	26.4	26.6	101		-	-		75-125	-		20
Sodium, Total	125J	881	1060	120		-	-		75-125	-		20
Thallium, Total	ND	10.6	10.1	96		-	-		75-125	-		20
Vanadium, Total	32.4	44	76.0	99		-	-		75-125	-		20

Matrix Spike Analysis Batch Quality Control

Project Name: END2201

Lab Number: L2270292

Project Number: END2201

Report Date: 12/29/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1723839-3 QC Sample: L2270292-01 Client ID: A-4									
Zinc, Total	53.8	44	147	212	Q	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1723840-3 QC Sample: L2200082-122 Client ID: MS Sample									
Mercury, Total	0.065	1.25	1.25	94	-	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1725574-3 QC Sample: L2268514-04 Client ID: MS Sample									
Mercury, Total	0.080	1.66	1.71	98	-	-	80-120	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1723839-4 QC Sample: L2270292-01 Client ID: A-4						
Aluminum, Total	7880	8230	mg/kg	4		20
Antimony, Total	2.92J	4.04J	mg/kg	NC		20
Arsenic, Total	9.70	12.1	mg/kg	22	Q	20
Barium, Total	45.7	43.7	mg/kg	4		20
Beryllium, Total	0.569	0.804	mg/kg	34	Q	20
Cadmium, Total	ND	ND	mg/kg	NC		20
Calcium, Total	1730	3040	mg/kg	55	Q	20
Chromium, Total	21.5	37.5	mg/kg	54	Q	20
Cobalt, Total	9.76	9.98	mg/kg	2		20
Copper, Total	35.7	74.7	mg/kg	71	Q	20
Iron, Total	26900	38700	mg/kg	36	Q	20
Lead, Total	36.9	49.2	mg/kg	29	Q	20
Magnesium, Total	2070	2570	mg/kg	22	Q	20
Manganese, Total	267	239	mg/kg	11		20
Nickel, Total	9.16	10.3	mg/kg	12		20
Potassium, Total	866	701	mg/kg	21	Q	20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	125J	119J	mg/kg	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1723839-4 QC Sample: L2270292-01 Client ID: A-4					
Thallium, Total	ND	0.374J	mg/kg	NC	20
Vanadium, Total	32.4	46.9	mg/kg	37 Q	20
Zinc, Total	53.8	69.2	mg/kg	25 Q	20
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1723840-4 QC Sample: L2200082-122 Client ID: DUP Sample					
Mercury, Total	0.065	0.046J	mg/kg	NC	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1725574-4 QC Sample: L2268514-04 Client ID: DUP Sample					
Mercury, Total	0.080	0.055J	mg/kg	NC	20

INORGANICS & MISCELLANEOUS

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-01
 Client ID: A-4
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:50
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.9		%	0.100	NA	1	-	12/15/22 17:49	121,2540G	MF



Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-02
 Client ID: A-5
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 07:30
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.1		%	0.100	NA	1	-	12/15/22 17:49	121,2540G	MF



Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

SAMPLE RESULTS

Lab ID: L2270292-03
 Client ID: A-6
 Sample Location: 321 MANOR RD

Date Collected: 12/14/22 10:01
 Date Received: 12/14/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.7		%	0.100	NA	1	-	12/15/22 17:49	121,2540G	MF



Lab Duplicate Analysis

Batch Quality Control

Project Name: END2201

Project Number: END2201

Lab Number: L2270292

Report Date: 12/29/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1723911-1 QC Sample: L2270292-01 Client ID: A-4						
Solids, Total	89.9	90.7	%	1		20

Project Name: END2201
Project Number: END2201

Serial_No:12292214:15

Lab Number: L2270292
Addendum 02 06/19/2023
Report Date: 12/29/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler **Custody Seal**
A Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2270292-01A	5 gram Encore Sampler	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-01B	5 gram Encore Sampler	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-01C	5 gram Encore Sampler	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-01D	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7)
L2270292-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),CR-TI(180),TL-TI(180),ZN-TI(180),PB-TI(180),CU-TI(180),SB-TI(180),SE-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MG-TI(180),MN-TI(180),HG-T(28),CA-TI(180),NA-TI(180),K-TI(180),CD-TI(180)
L2270292-01F	Glass 250ml/8oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),NYTCL-8081(14),NYTCL-8082(365)
L2270292-01X	Vial MeOH preserved split	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-01Y	Vial Water preserved split	A	NA		2.8	Y	Absent	15-DEC-22 14:36	NYTCL-8260HLW(14)
L2270292-01Z	Vial Water preserved split	A	NA		2.8	Y	Absent	15-DEC-22 14:36	NYTCL-8260HLW(14)
L2270292-02A	5 gram Encore Sampler	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-02B	5 gram Encore Sampler	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-02C	5 gram Encore Sampler	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-02D	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7)
L2270292-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),AL-TI(180),TL-TI(180),SB-TI(180),ZN-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),V-TI(180),CO-TI(180),HG-T(28),MG-TI(180),MN-TI(180),FE-TI(180),CD-TI(180),NA-TI(180),CA-TI(180),K-TI(180)
L2270292-02F	Glass 250ml/8oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),NYTCL-8081(14),NYTCL-8082(365)
L2270292-02X	Vial MeOH preserved split	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-02Y	Vial Water preserved split	A	NA		2.8	Y	Absent	15-DEC-22 14:36	NYTCL-8260HLW(14)

*Values in parentheses indicate holding time in days



Project Name: END2201

Lab Number: L2270292

Project Number: END2201

Addendum 02 06/19/2023

Report Date: 12/29/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2270292-02Z	Vial Water preserved split	A	NA		2.8	Y	Absent	15-DEC-22 14:36	NYTCL-8260HLW(14)
L2270292-03A	5 gram Encore Sampler	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-03B	5 gram Encore Sampler	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-03C	5 gram Encore Sampler	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-03D	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7)
L2270292-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),ZN-TI(180),SB-TI(180),CU-TI(180),PB-TI(180),SE-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),CA-TI(180),K-TI(180),NA-TI(180),CD-TI(180)
L2270292-03F	Glass 250ml/8oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),NYTCL-8081(14),NYTCL-8082(365)
L2270292-03X	Vial MeOH preserved split	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L2270292-03Y	Vial Water preserved split	A	NA		2.8	Y	Absent	15-DEC-22 14:36	NYTCL-8260HLW(14)
L2270292-03Z	Vial Water preserved split	A	NA		2.8	Y	Absent	15-DEC-22 14:36	NYTCL-8260HLW(14)

Project Name: END2201

Lab Number: A-0670092 06/19/2023

Project Number: END2201

Report Date: 12/29/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name: END2201
Project Number: END2201

Lab Number: A12270292
Report Date: 12/29/22

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



Project Name: END2201
Project Number: END2201

Lab Number: A12270292
Report Date: 12/29/22

06/19/2023

Data Qualifiers

Identified Compounds (TICs).

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



Project Name: END2201
Project Number: END2201

Lab Number: ~~12270292~~ 12270292
Report Date: 12/29/22

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

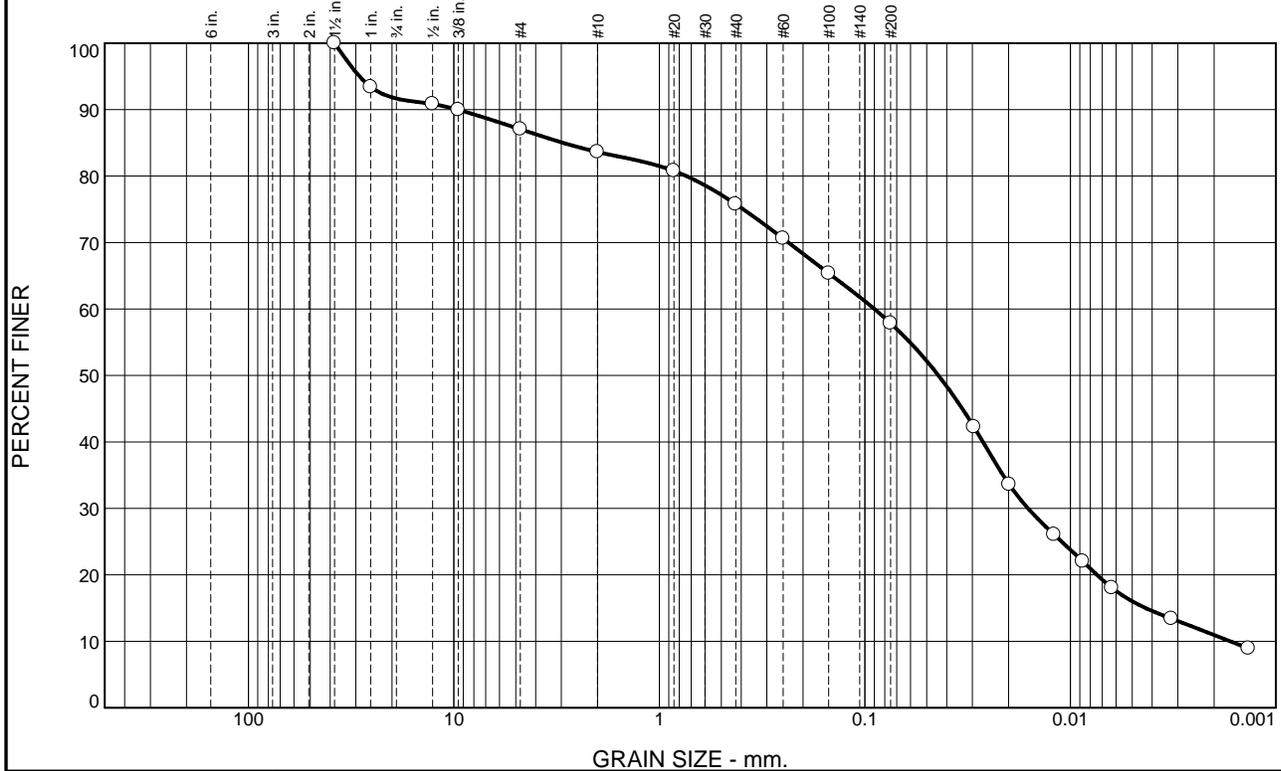
For a complete listing of analytes and methods, please contact your Alpha Project Manager.



APPENDIX D

GEOTECHNICAL TESTING RESULTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.3	4.7	3.4	7.8	17.9	41.9	16.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0		
1	93.4		
.5	90.8		
.375	90.0		
#4	87.0		
#10	83.6		
#20	80.8		
#40	75.8		
#60	70.6		
#100	65.4		
#200	57.9		

Material Description

Orange-brown sandy silt

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 9.6293 D₈₅= 2.9403 D₆₀= 0.0899
D₅₀= 0.0439 D₃₀= 0.0161 D₁₅= 0.0043
D₁₀= 0.0017 C_u= 53.98 C_c= 1.73

Classification

USCS= ML AASHTO=

Remarks

Moisture content=16.9%
USCS based on dilatancy & plasticity per ASTM D2488

* (no specification provided)

Source of Sample: B-6 Depth: 0-4 ft.

Date: 1-16-2023

SKYLANDS TESTING, LLC

Client: P.W. Grosser Consulting
Project: END2201 - 321 Manor Road
Staten Island, NY

Sparta, NJ

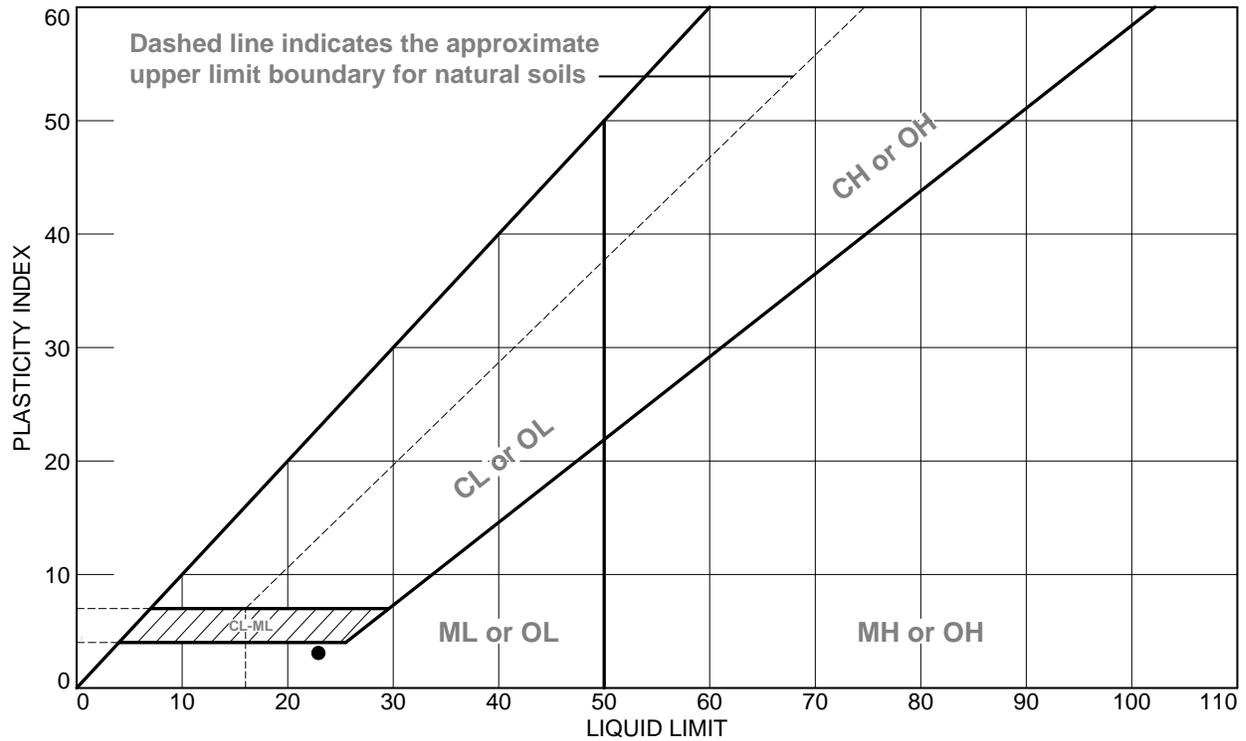
Project No: 23-003

Fig.

Tested By: LH, VRS

Checked By: EJS

ATTERBERG LIMITS REPORT



SOIL DATA								
SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
● B-7		0-2 ft.	25.6	20	23	3	1.9	

SKYLANDS TESTING, LLC
Sparta, NJ

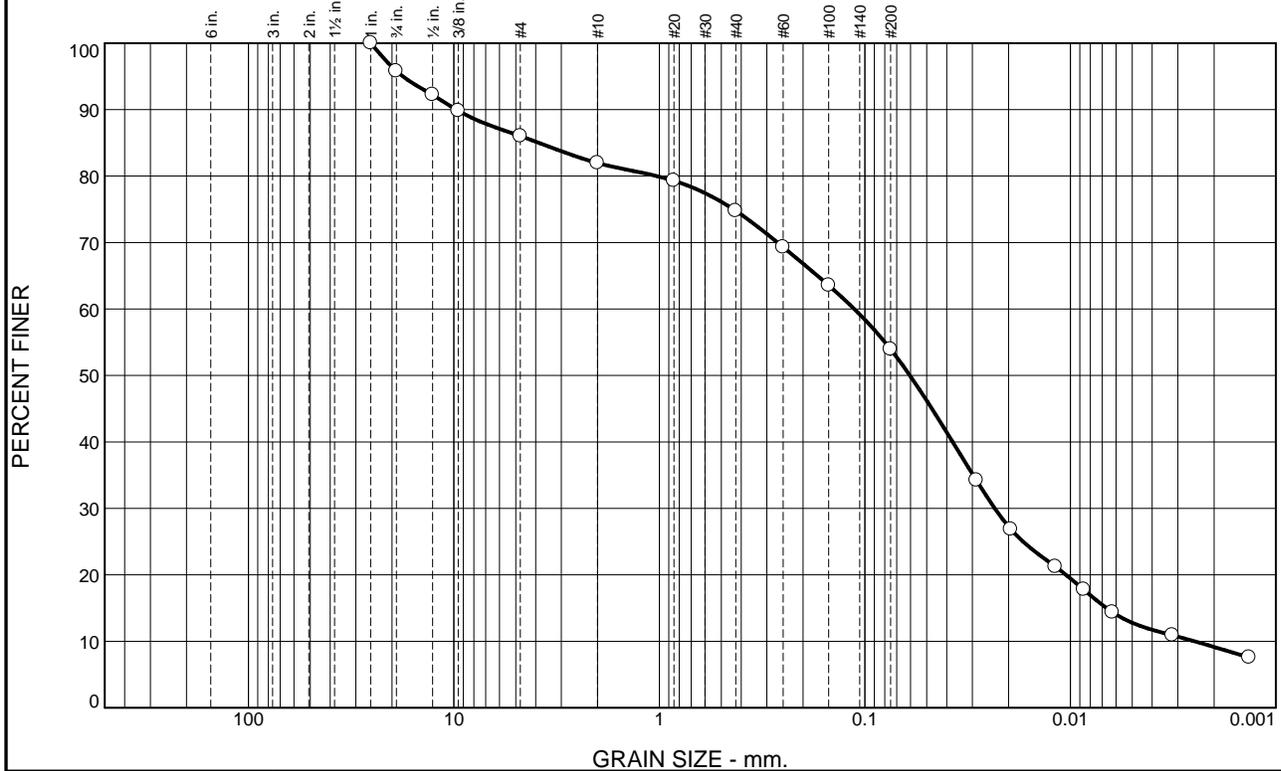
Client: P.W. Grosser Consulting
Project: END2201 - 321 Manor Road
Staten Island, NY
Project No.: 23-003

Fig.

Tested By: LH, VRS

Checked By: EJS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.2	9.8	4.0	7.2	20.8	41.2	12.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
.75	95.8		
.5	92.2		
.375	89.8		
#4	86.0		
#10	82.0		
#20	79.3		
#40	74.8		
#60	69.3		
#100	63.5		
#200	54.0		

Material Description

Red-brown sandy silt

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 9.7422 D₈₅= 3.8532 D₆₀= 0.1126
D₅₀= 0.0604 D₃₀= 0.0233 D₁₅= 0.0067
D₁₀= 0.0025 C_u= 45.25 C_c= 1.94

Classification

USCS= ML AASHTO=

Remarks

Moisture content=13.2%
USCS based on dilatancy & plasticity per ASTM D2488

* (no specification provided)

Source of Sample: B-7 Depth: 2-4 ft.

Date: 1-16-2023

SKYLANDS TESTING, LLC

Client: P.W. Grosser Consulting
Project: END2201 - 321 Manor Road
 Staten Island, NY

Sparta, NJ

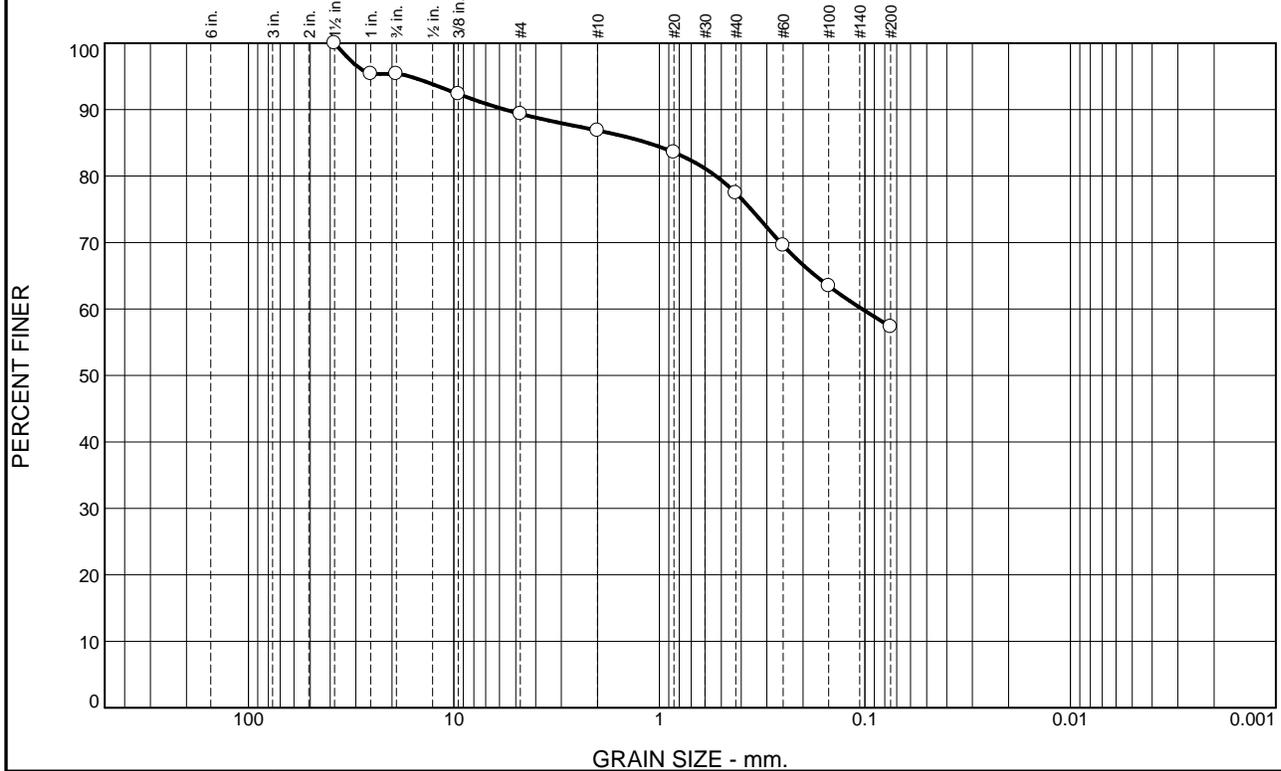
Project No: 23-003

Fig.

Tested By: LH, VRS

Checked By: EJS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.6	6.0	2.5	9.4	20.2	57.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0		
1	95.4		
.75	95.4		
.375	92.3		
#4	89.4		
#10	86.9		
#20	83.6		
#40	77.5		
#60	69.6		
#100	63.5		
#200	57.3		

Material Description

Red-brown sandy silt

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 5.6360 D₈₅= 1.1393 D₆₀= 0.1033
 D₅₀= D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

Sample washed on #200 sieve
 USCS based on dilatancy & plasticity per ASTM D2488

* (no specification provided)

Source of Sample: B-18 Depth: 0-4 ft.

Date: 1-16-2023

SKYLANDS TESTING, LLC

Client: P.W. Grosser Consulting
 Project: END2201 - 321 Manor Road
 Staten Island, NY

Sparta, NJ

Project No: 23-003

Fig.

Tested By: LH

Checked By: VRS

ALL ISLAND TESTING ASSOCIATES, INC. Addendum 02 06/19/2023

75B Pine Aire Drive
Bay Shore, NY 11706
Phone (631) 273-5717
Fax (631) 273-2457

PW Grosser Consulting
630 Johnson Avenue
Suite 7
Bohemia, NY 11716

Re: 321 Manor Rd., Staten Island/Sample del 1/12/23

<u>SIEVE SIZE</u>	<u>PERCENT PASSING</u>
3/4	100.0
3/8	96.2
4	93.0
10	88.7
20	83.6
40	78.0
60	71.1
100	64.6
200	54.0 (Wash)
MAXIMUM DENSITY (#/ft ³)	126.1
OPTIMUM MOISTURE (%)	16.1

Respectfully Submitted,
ALL ISLAND TESTING

Dennis Quick

Dennis Quick



APPENDIX E

PAVEMENT DESIGN CALCULATIONS

**HEAVY DUTY ASPHALT PAVEMENT
Flexible Pavement Design Recommendations**

Pavement Design Requirements:

Anticipated traffic data not provided by Engineer of Record. Traffic data assumptions by Geotech Engineer based on observed site use.

• Anticipated Traffic Data

Anticipated Traffic Data for Pavement:

Truck Type 1	Anticipated Traffic Breakdown for Pavement Areas	10	vehicles/day
Truck Type 2		80	vehicles/day

• AASHTO Vehicle Factors:

Truck Type 1: M983A4 LET

Assuming a maximum of 72 kips/Truck: 2 tandem axles (36 kips/axle)
36 kip load factor = 1.38

Assuming a maximum of 36 kips/Trailer: 1 tandem axle (36 kips/axle)

AASHTO Truck Factor = 2(1.38) + (1.38) = 4.14

Truck Type 2: M1088

Assuming a maximum of 24 kips/Truck: 1 tandem axle (12 kips/axle)
1 single axle (12 kips/axle)
12 kip load factor (single) = 0.19
12 kip load factor (tandem) = 0.014

AASHTO Truck Factor = (0.014) + (0.19) = 0.204

• FOR PAVEMENT DESIGN AREAS

Equivalent Single Axle Loads (ESAL_{TRUCKS}) = Trucks/Day x 365 Days/Year x Design Life * AASHTO Truck Factor

ESAL TRUCK TYPE 1 226665

ESAL TRUCK TYPE 2 89352

ESAL TOTAL = 316017



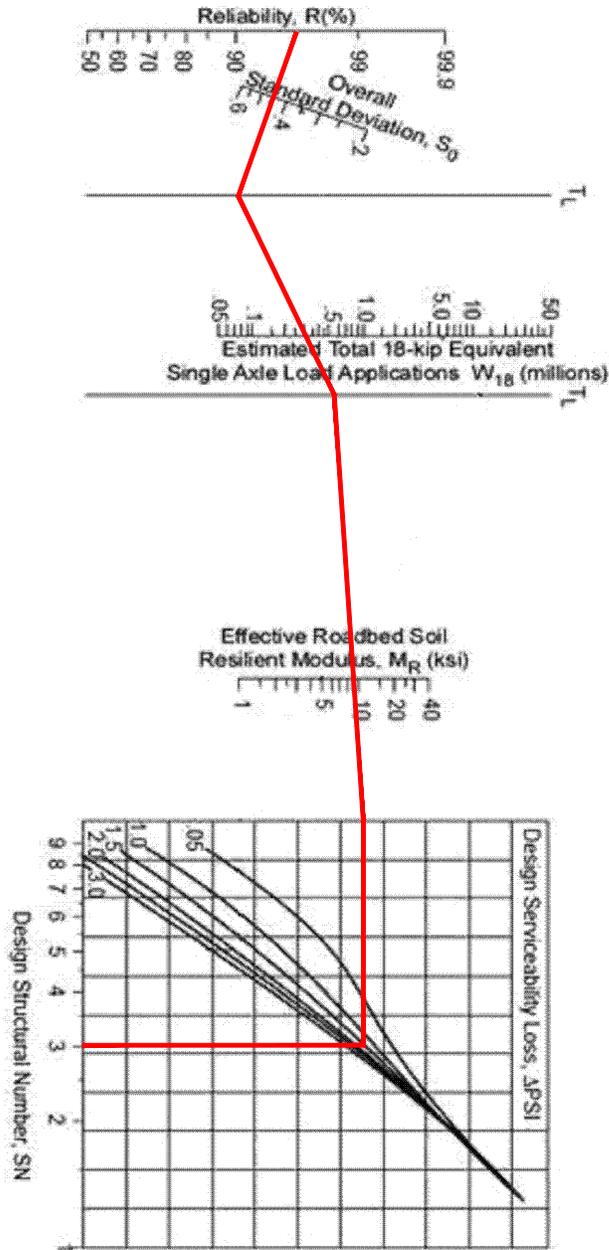
FLEXIBLE PAVEMENT DESIGN CALCULATIONS

HEAVY DUTY ASPHALT PAVEMENT

321 MANOR ROAD
STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

ASSUMED CBR VALUE = 6



FLEXIBLE PAVEMENT DESIGN CALCULATIONS

HEAVY DUTY ASPHALT PAVEMENT

321 MANOR ROAD
STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

HEAVY DUTY ASPHALT PAVEMENT
Flexible Pavement Design Recommendations

Design Criteria:

Design Life =	15
Terminal Serviceability =	2.5
Reliability =	95
Initial Serviceability =	4.2
Standard Deviation =	0.45
CBR =	6
Equivalent Single Axle Loads =	316,017

Estimate Resilient Modulus (M_R)

M _R =	(1,500) x (CBR)	=	9,000
------------------	-----------------	---	-------

SN_{Required} (From the AASHTO Design Chart) = 3

Minimum Recommended Pavement Section:

Thickness	Material	AASHTO Coefficient		
1.5 inches	Bituminous Concrete Surface Course	x	0.44	= 0.66
2.5 inches	Bituminous Binder Course	x	0.44	= 1.10
0 inches	Bituminous Base Course	x	0.40	= 0.00
12 inches	Dense Graded Aggregate	x	0.11	= 1.32

Recommended SN = 3.08

Check whether the Recommended SN is greater than or equal to the Required SN

Recommended SN
3.08

Required SN
3

CHECK
YES



FLEXIBLE PAVEMENT DESIGN CALCULATIONS

HEAVY DUTY ASPHALT PAVEMENT

321 MANOR ROAD
STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

LIGHT DUTY ASPHALT PAVEMENT
Flexible Pavement Design Recommendations

Pavement Design Requirements:

Anticipated traffic data not provided by Engineer of Record. Traffic data assumptions by Geotech Engineer based on observed site use.

• Anticipated Traffic Data

Anticipated Traffic Data for Pavement:

Anticipated Traffic Breakdown for Pavement Areas	80	vehicles/day
---	----	--------------

• AASHTO Vehicle Factors:

Assuming an average of 4 kips/Car:

2 single axles (2 kips/axle)
2 kip load factor = 0.0003

AASHTO Car Factor =

0.00209

• FOR PAVEMENT DESIGN AREAS

Equivalent Single Axle Loads (ESAL_{CARS}) = Cars/Day x 365 Days/Year x Design Life * AASHTO Car Factor

ESAL_{CARS}

915



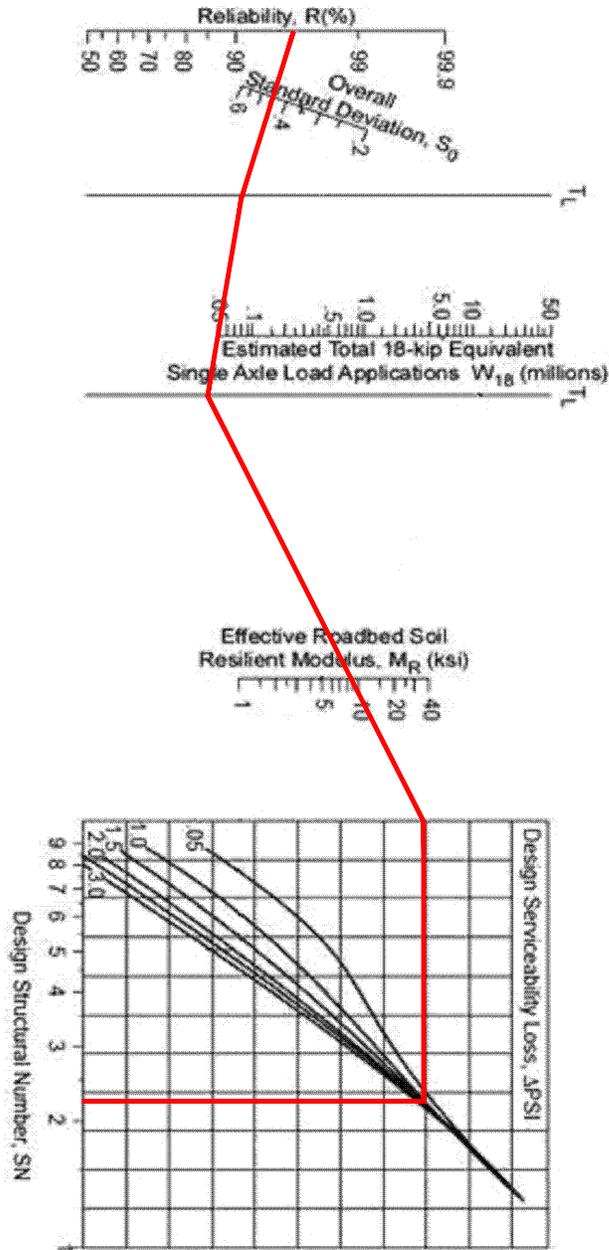
FLEXIBLE PAVEMENT DESIGN CALCULATIONS

LIGHT DUTY ASPHALT PAVEMENT

321 MANOR ROAD
STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

ASSUMED CBR VALUE = 6



FLEXIBLE PAVEMENT DESIGN CALCULATIONS

LIGHT DUTY ASPHALT PAVEMENT

321 MANOR ROAD
STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

LIGHT DUTY ASPHALT PAVEMENT
Flexible Pavement Design Recommendations

Design Criteria:

Design Life =	15
Terminal Serviceability =	2.5
Reliability =	95
Initial Serviceability =	4.2
Standard Deviation =	0.45
CBR =	6
Equivalent Single Axle Loads =	915

Estimate Resilient Modulus (M_R)

M _R =	(1,500) x (CBR)	=	9,000
------------------	-----------------	---	-------

SN_{Required} (From the AASHTO Design Chart) = 2.3

Minimum Recommended Pavement Section:

Thickness	Material	AASHTO Coefficient		
1.5 inches	Bituminous Concrete Surface Course	0.44	=	0.66
2.5 inches	Bituminous Binder Course	0.44	=	1.10
0 inches	Bituminous Base Course	0.40	=	0.00
6 inches	Dense Graded Aggregate	0.11	=	0.66

Recommended SN = 2.42

Check whether the Recommended SN is greater than or equal to the Required SN

Recommended SN	Required SN	CHECK
2.42	2.3	YES



FLEXIBLE PAVEMENT DESIGN CALCULATIONS

LIGHT DUTY ASPHALT PAVEMENT

321 MANOR ROAD
STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

LIGHT DUTY ASPHALT PAVEMENT (POV02)
Flexible Pavement Design Recommendations

Pavement Design Requirements:

Anticipated traffic data not provided by Engineer of Record. Traffic data assumptions by Geotech Engineer based on observed site use.

• Anticipated Traffic Data

Anticipated Traffic Data for Pavement:

Anticipated Traffic Breakdown for Pavement Areas	80	vehicles/day
--	----	--------------

• AASHTO Vehicle Factors:

Assuming an average of 4 kips/Car:

2 single axles (2 kips/axle)

2 kip load factor = 0.0003

AASHTO Car Factor =

0.00209

• FOR PAVEMENT DESIGN AREAS

Equivalent Single Axle Loads (ESAL_{CARS}) = Cars/Day x 365 Days/Year x Design Life * AASHTO Car Factor

ESAL_{CARS}

915



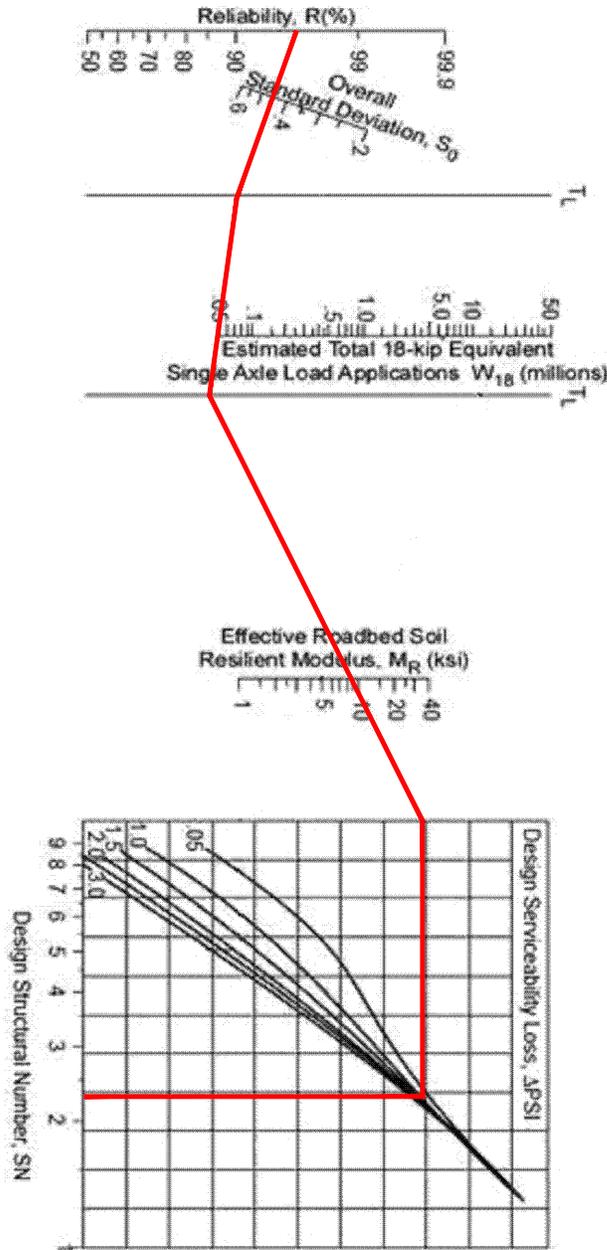
FLEXIBLE PAVEMENT - CHECK EXISTING

LIGHT DUTY ASPHALT PAVEMENT (POV02)

321 MANOR ROAD
STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

ASSUMED CBR VALUE = 6



FLEXIBLE PAVEMENT - CHECK EXISTING

LIGHT DUTY ASPHALT PAVEMENT (POV02)

321 MANOR ROAD
 STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

LIGHT DUTY ASPHALT PAVEMENT (POV02)
Flexible Pavement Design Recommendations

Design Criteria:

Design Life =	15
Terminal Serviceability =	2.5
Reliability =	95
Initial Serviceability =	4.2
Standard Deviation =	0.45
CBR =	6
Equivalent Single Axle Loads =	915

Estimate Resilient Modulus (M_R)

M _R =	(1,500) x (CBR)	=	9,000
------------------	-----------------	---	-------

SN_{Required} (From the AASHTO Design Chart) = 2.3

Minimum Recommended Pavement Section:

Thickness	Material		AASHTO Coefficient		
4.5 inches	Bituminous Concrete Surface Course	x	0.44	=	1.98
0 inches	Bituminous Binder Course	x	0.44	=	0.00
0 inches	Bituminous Base Course	x	0.40	=	0.00
0 inches	Dense Graded Aggregate	x	0.11	=	0.00

Recommended SN = 1.98

Check whether the Recommended SN is greater than or equal to the Required SN

Recommended SN
1.98

Required SN
2.3

CHECK
NO



FLEXIBLE PAVEMENT - CHECK EXISTING

LIGHT DUTY ASPHALT PAVEMENT (POV02)

321 MANOR ROAD
STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

LIGHT DUTY ASPHALT PAVEMENT (POV01B)
Flexible Pavement Design Recommendations

Pavement Design Requirements:

Anticipated traffic data not provided by Engineer of Record. Traffic data assumptions by Geotech Engineer based on observed site use.

• Anticipated Traffic Data

Anticipated Traffic Data for Pavement:

Anticipated Traffic Breakdown for Pavement Areas	80	vehicles/day
--	----	--------------

• AASHTO Vehicle Factors:

Assuming an average of 4 kips/Car:

2 single axles (2 kips/axle)

2 kip load factor = 0.0003

AASHTO Car Factor =

0.00209

• FOR PAVEMENT DESIGN AREAS

Equivalent Single Axle Loads (ESAL_{CARS}) = Cars/Day x 365 Days/Year x Design Life * AASHTO Car Factor

ESAL_{CARS}

915



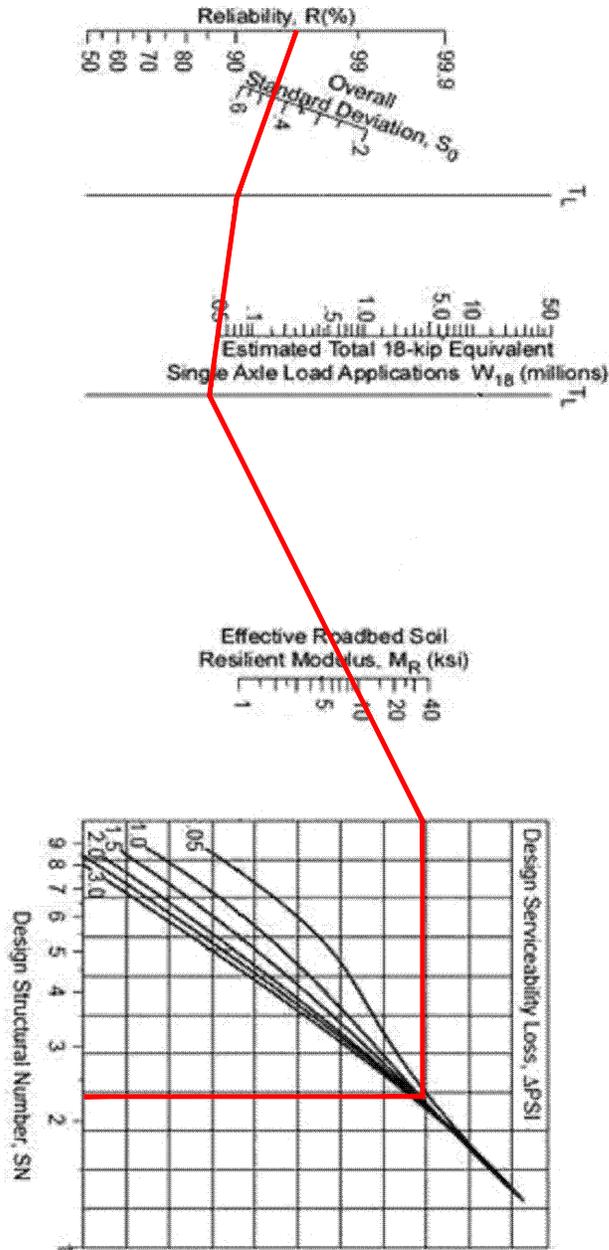
FLEXIBLE PAVEMENT - CHECK EXISTING

LIGHT DUTY ASPHALT PAVEMENT (POV01B)

321 MANOR ROAD
STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

ASSUMED CBR VALUE = 6



FLEXIBLE PAVEMENT - CHECK EXISTING

LIGHT DUTY ASPHALT PAVEMENT (POV01B)

321 MANOR ROAD
 STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

LIGHT DUTY ASPHALT PAVEMENT (POV01B)
Flexible Pavement Design Recommendations

Design Criteria:

Design Life =	15
Terminal Serviceability =	2.5
Reliability =	95
Initial Serviceability =	4.2
Standard Deviation =	0.45
CBR =	6
Equivalent Single Axle Loads =	915

Estimate Resilient Modulus (M_R)

M _R =	(1,500) x (CBR)	=	9,000
------------------	-----------------	---	-------

SN_{Required} (From the AASHTO Design Chart) = 2.3

Minimum Recommended Pavement Section:

Thickness	Material		AASHTO Coefficient		
3.5 inches	Bituminous Concrete Surface Course	x	0.44	=	1.54
0 inches	Bituminous Binder Course	x	0.44	=	0.00
0 inches	Bituminous Base Course	x	0.40	=	0.00
0 inches	Dense Graded Aggregate	x	0.11	=	0.00

Recommended SN = 1.54

Check whether the Recommended SN is greater than or equal to the Required SN

Recommended SN
1.54

Required SN
2.3

CHECK
NO



FLEXIBLE PAVEMENT - CHECK EXISTING

LIGHT DUTY ASPHALT PAVEMENT (POV01B)

321 MANOR ROAD
STATEN ISLAND, NY

Project:	END2201
Designed by:	-
Approved by:	BH
Drawn by:	MB
Date:	12/22/2022
Figure No:	

Sold by:

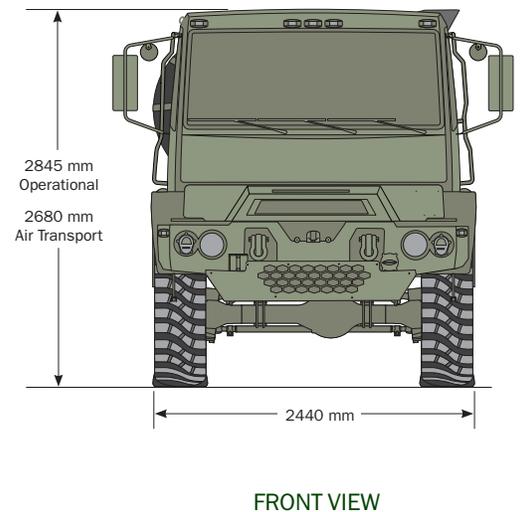
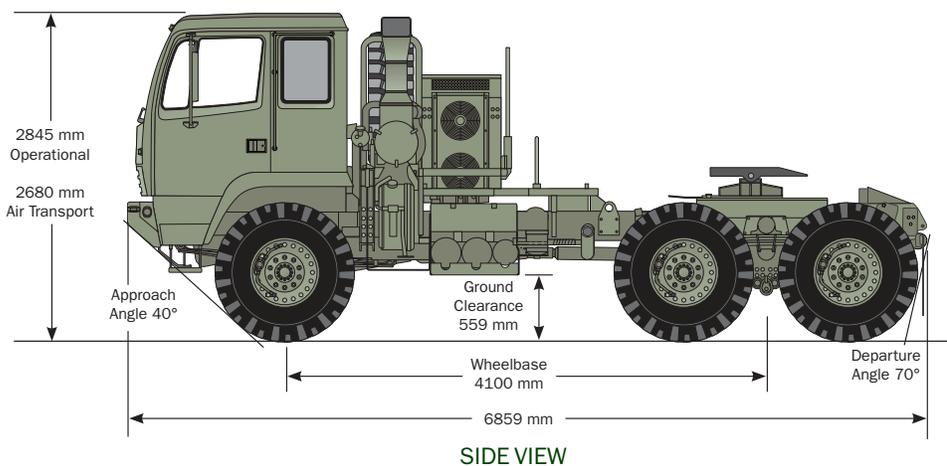
**FMTV
TRUCK
SALES**

FMTV M1088 A1 5.0 ton Tractor

The Family of Medium Tactical Vehicles (FMTV) provides the U.S. Army's backbone for tactical unit mobility and logistics support throughout the battlefield. Produced by Stewart & Stevenson Tactical Vehicle Systems, LP, these vehicles are considered the most sophisticated off-road, multi-purpose military tactical vehicles in use, and are capable of operating worldwide on primary and secondary roads, as well as on trails and cross-country in weather extremes from -50°F (-46°C) to +120°F (49°C).

KEY FEATURES

- Full-time all-wheel drive
- Fully automatic transmission
- Central Tire Inflation System (CTIS)
- Technical Manuals (TMs)
- U.S. Army proven ultra-reliability
- Family of 14+ vehicles with 80% commonality
- U.S. Army certified 22-year corrosion protection
- Highest proven reliability of any tactical vehicle



FMTV M1088 A1

5.0 ton Tractor

VEHICLE SPECIFICATIONS

Length:	270 in (6,859 mm)
Width:	96 in (2,438 mm)
Height:	
Operational	112 in (2,845 mm)
Height-Pintle:	
Unloaded	36 in (905 mm)
With Payload	34 in (864 mm)
Wheel Base:	161.4 in (4,100 mm)
Ground Clearance:	
Loaded	22 in (559 mm)
Under Axle	14.4 in (365 mm)
Approach/Departure Angle:	40°/70°
Vehicle Curb Weight with Fuel:	19,654 lb (8,915 kg)
Payload, 5th Wheel Vertical Load:	25,000 lb (11,340 kg) plus kits
Towed Load:	63,000 lb (28,576 kg)
Maximum Speed:	58 mph (94 km/h)
Range, 78 gal (295 L) nominal:	300+ mi (483+ km)
Maximum Grade/Side Slope:	60%/30%
Turning Circle:	
Curb-to-Curb	55.6 ft (20.0 m)
Fording, without Kit:	30 in (762 mm)
with Kit:	50 in (1,270 mm)

EQUIPMENT SPECIFICATIONS

Cab:	
Design	3-Man, Ergonomically Adjustable Driver Seat and Steering Wheel
Steering	Power Assisted, Recirculating
Suspension	3-Point Rubber Isolator
Engine:	
Caterpillar 3126	Heavy Duty Diesel, 6-Cylinder, Fuel Injected Turbocharged and Aftercooled, EPA Certified
Rating	290 hp (216 kW) @ 2400 rpm
Displacement	442 cu in. (7.2 L)
Torque	738 lb ft. (1,000 Nm) @ 2600 rpm
Fuel	Diesel, DF-2, JP-4, JP-8, VV-F-800
Oil	MIL-L-D, MIL-L-46167, 22 qt (21 L)
Transmission:	
Allison 3070 (MD-D7)	Automatic/Select 6-speed, Electronically Controlled
Full-Time AWD	Integral Transfer Case
Normal Operation	30% Torque Front Wheels; 70% Torque Rear Wheels; Off-Road, Equal Front & Rear
Oil	MIL-L-2104D, MIL-L-46167, 31.8 qt (30 L)
Axles:	
ArvinMeritor	Front, Intermediate and Rear Axles
Carrier	Single Reduction, Amboid-Wheel End
Wheel End	Gearing Bevel Wheel End Reduction, Ratio 2:1
Overall Axle Gear Ratio	7.8:1
Front Axle Steering	35°
Electrical:	
System	12/24 volt, EMI/HAEMP Qualified, Central Power Distribution Panel, Battery and Charging Management System
Alternator	100 amp, 12/24 volt, Waterproof, EMI/RFI Suppressed
Starter	24 volt Waterproof

Tires:	Goodyear 395/85R20 All-Terrain
Brakes:	
Primary	Air Actuated
Secondary	Air Actuated
Central Tire Inflation System, Dana/Eaton:	Cab-Mounted Electronic Controls, Operable while Driving Highway, Cross-Country, Air Transport, Sand/Mud/Snow, and Emergency Modes
Diagnostics:	Technical Manuals (TMs)
Suspension:	
Front	Parabolic-Tapered Leaf Spring with Coil over Hydraulic Shock Absorbers
Rear	Tandem Axles with Parabolic-Tapered Leaf Spring with Hydraulic Shock Absorbers and Stabilizer Bar
Transportability/Deployability:	
Internally	Air-transportable by C-130, C-141, C-17, and C-5A at
Externally	GWV Transportable by CH-47 and CH-53 Helicopters
Self Recovery Winch:	
(Optional)	15,500 lb (7,031 kg) rating, 280 ft (85.3 m) Line Capacity, Fore/Aft Recovery Positions
Fifth Wheel:	
Holland-Siding	Full Oscillating, 36 in (914 mm) diameter, with Forks and Semi-automatic Lock for SAE J700 2.0 in (51 mm) Kingpin
Vertical Load	25,000 lb (11,340 kg) Rating

FOR MORE INFORMATION CONTACT:

Sold By:

FMTV
TRUCK
SALES

sales@fmtvtrucks.com

1.406.624.3963

www.fmtvtrucks.com

All rights reserved.

Specifications are subject to change with notice.



Stewart & Stevenson Tactical Vehicles Systems, LP
5000 I-10 West Sealy, Texas 77474
Bus: (281) 856-0139 Fax: (713) 867-1518
www.ssss.com

HEAVY EXPANDED MOBILITY TACTICAL TRUCK | LIGHT EQUIPMENT TRANSPORTER

HEMTT A4 | M983A4 LET



**Performance To Move Light Equipment
Wherever The Mission Demands.
Oshkosh Defense® HEMTT A4 M983A4
Light Equipment Transporter (LET).**

The Oshkosh Defense® HEMTT A4 Light Equipment Transporter (LET) complements its heavy-payload HEMTT counterparts by transporting light-duty equipment and vehicles wherever the mission demands, even in the most treacherous environments.

Built with rugged and durable components with extreme maneuverability and versatility, the HEMTT A4 LET serves as the prime mover for light-duty tactical equipment and vehicles including the M870 series, Intermediate Stryker Recovery System (ISRS) and Mine-Resistant Ambush-Protected (MRAP) vehicles. An anti-lock braking system, traction control and air-ride suspension allow for easy navigation over any type of terrain. The large common cab offers substantial space and is also climate controlled to help assure personnel comfort and readiness.

To assure light-duty vehicles and equipment are ready for their missions, military personnel can rely on the mobility, versatility, dependability and extreme performance of the HEMTT A4 LET.

HEMTT A4 | M983A4 LET | HEAVY EXPANDED MOBILITY TACTICAL TRUCK | LIGHT EQUIPMENT TRANSPORTER

- 500 horsepower Caterpillar® C15 engine offers 55 more horsepower than its predecessor, the HEMTT A2
- Large, climate controlled, armor-ready cab
- Anti-lock braking system
- For use with loaded trailers up to 113,000 lbs. gross (5126 kg)
- Major changes and additions to the cab offer greater comfort and safety:
 - LTAS B-kit ready
 - Integrated attachments for armor
 - Integrated under cab protection
 - Integrated mounting for GPK and machine gun mount
 - Heavy-duty cab mounts
 - Common cab with PLS A1
 - Air conditioning



Cab Seating: 2 person • air-ride seats
 • 4-point safety belts

Axle Configuration: 8x8

Curb Weight: 37,400 lbs. (16964 kg)

Gross Vehicle Weight Rating (GVWR):
 86,000 lbs. (39009 kg)
 With armor – 92,500 lbs. (41957 kg)

Gross Combined Weight Rating (GCWR):
 151,000 lbs. (68492 kg)

Length: 359 in. (9119 mm)

Width: 96 in. (2438 mm)

Height (over spare tire): 118 in. (2997 mm)

Track: 79 in. (2007 mm)

Wheelbase: 184 in. (4674 mm)

Maximum Speed: 62 mph (100 km/h)

Tires: 16.00 R20 XZL Michelin tubeless

Number of Tires: 8 + 1 spare

Fuel Capacity: 155 gal. (587 l)

Cruising Range: 300 mi. (483 km) cross country

Fording: 48 in. (1219 mm)

Air Transportability: C-130 and C-141

Engine: Caterpillar® C15, 500 hp 15.2 L
 • 2004 EPA compliant

Transmission: Allison® 4500 SP/5-speed automatic

Transfer Case: Oshkosh® enhanced 55000 Series/2 speed

Axles: Front – Oshkosh® 46K
 Rear – Dana® DS521

Suspension: Air ride with 4 height control valves
 Front – NEWAY ADS-240
 Rear – NEWAY AD-252

Electrical System: 24V start • 260A, 24V alternator
 • (2) 12V/15A & (1) 24V/15A accessory in cab
 • 12/24V trailer connectors

Brakes: Drum type • air actuated S-Cam • ABS/ATC

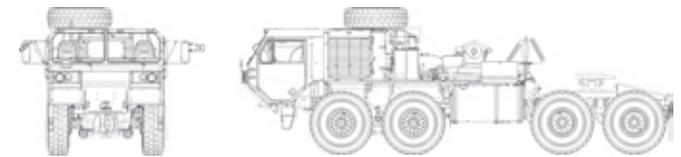
Steering: Power assist • front tandem

Lighting: LED lights on all sides • LED black-out drive light

Winch Retrieval System: 45,000 lbs. (20412 kg)

Winch Retrieval Cable: .9 in. (23 mm) at 151 ft. (46 m)

Fifth Wheel Vertical Loading: 40,000 lbs. (18144 kg)



Oshkosh Defense, LLC
 2307 Oregon Street, P.O. Box 2566
 Oshkosh, WI, USA 54903-2566
 ph 1.920.235.9150 • fax 1.920.233.9506

©2015 OSHKOSH DEFENSE, LLC
 An Oshkosh Corporation Company

Oshkosh Defense and the Oshkosh Defense logo are registered trademarks of Oshkosh Defense, LLC, Oshkosh, WI, USA
 All other trademarks are the property of their respective owners

oshkoshdefense.com